

NITIAL SITE INVESTIGATION NAVISTAR/BURLINGTON NORTHERN RAILROAD PROPERTIES ROCK ISLAND, ILLINOIS

March 1994

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Geraghty & Miller, Inc. is submitting this report to Navistar International Transportation Corporation and Burlington Northern Railroad for work performed at the former International Harvester manufacturing facility and Burlington Northern Railroad roundhouse property located in Rock Island, Illinois along the Sylvan Slough. This report was prepared in conformance with Geraghty & Miller's strict quality assurance/quality control procedures to ensure that the report meets industry standards in terms of the methods used and the information presented. If you have any questions or comments concerning this report, please contact one of the individuals listed below.

Respectfully submitted,

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1.0 INTRODUCTION

Geraghty & Miller, Inc. was retained by the Navistar International Transportation Corporation (Navistar) and Burlington Northern Railroad (BNR) to conduct a review of historical site information and perform an initial soil and groundwater investigation (Initial Site Investigation) in response to inquiries made by the Illinois Environmental Protection Agency (IEPA) regarding the seepage of oil into the Sylvan Slough, located in Rock Island, Illinois. The oil seepage into Sylvan Slough, a tributary of the Mississippi River, was reported by the IEPA along the Sylvan Slough adjacent to the western end of the Quad City Industrial Center (QCIC), the former International Harvester Farmall tractor assembly plant, and near two adjacent parcels of land owned by Navistar and BNR. The intent of the Initial Site Investigation is to identify the potential sources of the oil seepage to the Sylvan Slough and determine the nature of any subsurface soil or groundwater contamination that may exist.

This Initial Site Investigation Report summarizes the results of historical site information and agency file reviews, a preliminary site inspection, and an initial subsurface soil and groundwater investigation conducted by Geraghty & Miller. The historical site information review was performed to identify potential sources of the oil seepage and included the review of IEPA Bureau of Land and Division of Water Pollution Control files, previous environmental site assessments and investigations, aerial photographs, Sanborn fire insurance maps, and regulatory agency databases. The soil and groundwater investigation was performed to identify any subsurface contamination that may exist at the Navistar and BNR properties and its potential relationship to the oil seepage to the Sylvan Slough. The subsurface investigation consisted of the advancement of six soil borings completed as monitoring wells and soil and groundwater sampling.

This Initial Site Investigation Report has been organized into seven sections, each of which is briefly described below. Figures, tables, and references have also been included.

Section 1.0, Introduction, provides the introduction to, and states the intended purpose of, this report.

Section 2.0, Site Description, presents a description of the location of the Navistar and BNR sites, including the surrounding land use and regional geology and hydrogeology.

Section 3.0, Site History, presents a brief summary of the former Farmall facility, along with a summary of the former uses of the outfalls to Sylvan Slough, past oil discharges to Sylvan Slough reported to the IEPA, and previous environmental site assessments and investigations.

Section 4.0, Site Reconnaissance, presents a summary of Geraghty & Miller's preliminary site inspection of the Navistar, BNR, and QCIC properties. Areas of potential environmental concern and potential sources of the oil seepage are also identified.

Section 5.0, Subsurface Soil Investigation, presents a summary of the subsurface soil investigation that was performed on the BNR property.

Section 6.0, Groundwater Investigation, presents a summary of the installation and sampling of the monitoring wells at the BNR site and the sampling of the existing monitoring wells located on the Navistar property.

Section 7.0, Conclusions and Recommendations, provides a summary of conclusions regarding the potential sources of the oil seepage and current site subsurface conditions and includes Geraghty & Miller's recommendations for potential further action.

2.0 SITE DESCRIPTION

This section of the report consists of a review of the physical setting, surrounding land use, and geological setting of the site. The information presented in this section was obtained by Geraghty & Miller during our visual site inspection, conversations with Navistar and BNR representatives, previous site investigation reports, regulatory agency files, and published information.

2.1 PHYSICAL SETTING

The former International Harvester Farmall (Farmall) manufacturing facility, now known as the QCIC, is located adjacent to the Sylvan Slough. The Sylvan Slough is a tributary of the Mississippi River and flows between the site and Rock Island Arsenal, along 5th Avenue at 44th Street in Rock Island, Illinois (Figure 2-1). The former Farmall facility occupied approximately 80 acres, 20 of which are currently owned by Navistar; the remaining 60 acres, including the former facility buildings, are currently owned by the L.R. Christenson Company, the management firm operating the QCIC. The QCIC facility is approximately 1,250 feet wide and 8,250 feet long and occupies about 1.6 million square feet of floor space under roof.

The Navistar portion of the former Farmall property extends immediately along the Sylvan Slough between the eastern property boundaries at 46th Street (the boundary between the Cities of Rock Island and Moline) and the western property boundary at about 28th Street. The first 5 feet of land immediately along the Sylvan Slough is reportedly not owned by Navistar, but is a right-of-way either owned by a governmental authority or a public utility. The BNR property is located immediately west of the QCIC property and south of the Navistar property. A layout of the current ownership of the former Farmall property and the location of the BNR property are depicted on Figure 2-2. Figure 2-2 does not show the right-of-way immediately along the Sylvan Slough.

The general topography of the Navistar, BNR, and QCIC properties is relatively flat, with a gentle westward slope, and with notable slopes between each separate parcel of land.

Generally, the BNR property is approximately 5 feet lower than the Navistar and QCIC properties. The northern edge of the Navistar property drops off approximately 20 feet to the Sylvan Slough, which is located immediately north of the Navistar, BNR, and QCIC properties. According to the elevation survey conducted by Beling Consultants, Inc. at each monitoring well location, the average ground elevations of monitoring wells at the Navistar, BNR, and QCIC properties are 567.3 feet above mean sea level (ft msl), 563.4 ft msl, and 569.0 ft msl (Beling Consultants, Inc. 1993).

2.2 SURROUNDING LAND USE

The Navistar and BNR properties are located in an area of heavy industry along the Sylvan Slough. The nearest residential area is located south of 5th Avenue approximately ¼ mile south of the BNR property boundary; the campus for Augustana College is also located within this residential area. The surrounding land use is depicted on Figure 2-2.

As discussed previously, the Sylvan Slough forms the northern property boundary of the Navistar and QCIC properties; Rock Island Arsenal and Sylvan Island Park are on the opposite side of the slough.

The southern boundary of the Navistar, BNR, and QCIC properties primarily consists of a railroad right-of-way with several tracks operated by Iowa Interstate Railroad and one railroad right-of-way with two tracks operated by BNR. In addition to the right-of-ways, Iowa Interstate also operates a large railyard service facility. The Iowa Interstate service yard is located directly adjacent to the soil and groundwater study area. The Iowa Interstate right-of-ways and service yard were formerly owned and operated by the Rock Island Railroad. Based on Geraghty & Miller's review of aerial photographs and Sanborn Fire Insurance maps, the Rock Island Railroad operated a roundhouse facility until about the mid-1960s. The roundhouse facility was evident in a 1898 Sanborn map, but the exact date that the roundhouse facility operation began is unknown. In addition, aboveground oil storage tanks that currently exist on

the Iowa Interstate property were also evident on historical aerial photographs and Sanborn maps during the time that the Rock Island Railroad owned and operated the Iowa Interstate property.

The property west of the Navistar property is primarily undeveloped; a river water pump station for the City of Rock Island is also reportedly located to the west (Pilko & Associates, Inc. 1987a). The nearest property located east of the QCIC is the closed Midway Oil Company storage facility, which was a former distributor of Exxon products. Other properties located further to the east (along 3rd Avenue) include the City of Moline Wastewater Treatment Plant, an Iowa Illinois Electric Company Moline Generating Station, and a John Deere manufacturing facility.

2.3 GEOLOGICAL SETTING

The Navistar, BNR, and QCIC properties are located on predominantly man-made fill and sand and gravel river deposits overlying either Pleistocene to recent-aged alluvium or Devonian-aged shale and limestone. The undeveloped western portion of the Navistar property has approximately 15 to 20 feet of fill in place. The fill material encountered at the site consists primarily of black sands and cinders that likely originated from the on-site foundry that was in operation until 1967 (Pilko & Associates, Inc. 1989). Below the fill material is a minimum of 10 feet of sands and gravels deposited by the Mississippi River. The sands and gravels overlie the limestone and shale. Prior to the placement of the fill material in the late 1950s to early 1960s, the undeveloped western portion of the Navistar property was often flooded by high waters from the Sylvan Slough, as shown in historical aerial photographs.

No fill material is present at the BNR property. The soils encountered at the BNR property consist strictly of alluvial (river) sand and gravel deposits, which overlie limestone or shale. The thickness of the unconsolidated sand and gravel river deposits, as determined by soil borings advanced on site, averaged approximately 15 feet across the BNR property.

The shale and limestone encountered at the Navistar and BNR sites belong to the Cedar Valley Formation of the Devonian Age. The Cedar Valley Formation is primarily a highly fossiliferous, crystalline, light gray limestone containing some fine-grained, argillaceous beds, thin shaley partings, and sandstone (Willman, et al. 1975). Near Rock Island, the Cedar Valley Limestone is about 60 feet thick and overlies the Wapsipinicon Limestone, which, in Illinois, is only exposed in the Rock Island area. The Wapsipinicon Limestone, also of Devonian Age, is dominantly fine-grained to lithographic, pure limestone with some argillaceous and dolomitic beds that have a maximum thickness of about 60 feet thick near the Mississippi River (Willman, et al. 1975). The Cedar Valley and Wapsipinicon Formations, along with the underlying Silurian Age dolomite and limestone, form the Hunton Limestone Megagroup.

3.0 SITE HISTORY

The Navistar and QCIC properties were the site of a former International Harvester Farmall tractor assembly plant. Since its closing in 1986, the former Farmall site was divided into two parcels; 20 acres of the former Farmall site were transferred to Navistar, and 60 acres, which included the former Farmall facility buildings, were sold to the City of Rock Island. The City of Rock Island subsequently sold the property and facility buildings to L.R. Christenson Company, which redeveloped the site into an industrial park complex known as the QCIC.

Early operations at the site included woodworking shops and a gray iron (green sand) foundry, which operated until the late 1960s (Pilko & Associates, Inc. 1987a). The spent foundry sands were reportedly used as man-made fill materials for the western portion of the Navistar property to prevent the area from becoming inundated by flood waters from the Sylvan Slough. Small copper- and nickel-plating operations are also reported to have been operated at the former Farmall plant (Pilko & Associates, Inc. 1987a). At the time of the plant shutdown in 1986, the main operations at the site consisted primarily of tractor assembly. Parts were shipped from other locations and assembled at Rock Island (Pilko & Associates, Inc. 1987a).

During the peak of its operating life, besides its tractor assembly operations, the Farmall facility manufactured drive train parts, including transmissions, gears, axles, and shafts, for the tractors assembled on-site, as well as for larger tractors assembled at other locations (IEPA 1980a). The basic manufacturing processes consisted of the assembly of tractors and the machining of gears and castings (IEPA 1980a). The Farmall facility also operated eight wet paint booths for painting tractor components and two dry paint booths for touch-up painting, along with a heat-treating process (IEPA 1980a). Cyanide was reportedly not used in the heat-treating process (IEPA 1980a). The locations of the paint booths or heat-treating process operations within the former Farmall facility are unknown.

The wastewaters generated from the former Farmall facility operations that entered the on-site pretreatment facility consisted primarily of wash water from the parts washing machines, machine coolants, and used oils. Cooling water formerly discharged from the Farmall facility

consisted of discharges from the axle, gear, and shaft machining processes; from the heat-treating processes; and from welders and powerhouse air compressors (IEPA 1980a).

The Farmall facility also formerly maintained a number of underground storage tanks (USTs). There were reportedly 21 USTs, ranging in capacity from 6,000 to 13,000 gallons, at the former Farmall site (Pilko & Associates, Inc. 1987b). The USTs were used primarily for the storage of various petroleum-related products, such as hydraulic, transmission, lubricating, cutting, and quench oil, diesel fuel, diesel fuel with additives (flushing fluid), gasoline, and antifreeze (IEPA 1980a). Based on a Freedom of Information Act (FOIA) request sent by Geraghty & Miller to the Illinois Office of the State Fire Marshall (OSFM), a 1986 Notification of Underground Storage Tanks registration permit form showed that only 12 USTs, each of which was reportedly emptied of product and filled with an inert material, were present at the former Farmall site.

3.1 FORMER USES OF OUTFALLS TO SYLVAN SLOUGH

The Farmall facility formerly operated seven outfalls under a National Pollutant Discharge Elimination System (NPDES) permit for the discharge of non-contact cooling water to the Sylvan Slough (IEPA 1980a). One of the seven outfalls consisted of two separate outfalls that were considered to be a single outfall for permitting purposes. Farmall also formerly operated three additional outfalls for the discharge of storm-water runoff to Sylvan Slough. Process wastewaters were pretreated on-site prior to discharge to the Rock Island City sanitary sewer system (IEPA 1980a). The approximate location of each outfall, as described in the historical files reviewed by Geraghty & Miller, is depicted on Figures 3-1 and 3-2.

Subsequent to the closing of the Farmall plant in April 1986, all sanitary and wastewater discharges for the QCIC were connected to the City of Rock Island's publicly owned treatment works (POTW) without pretreatment (IEPA 1990a). The former Farmall wastewater outfalls were no longer in use except as storm water outfalls routed to area drains, downspouts, and perimeter tiles (IEPA 1990a).

The following summaries for each of the 11 outfalls to Sylvan Slough were provided in a technical memorandum prepared by Mr. James Kammueller of the Peoria Regional Office of the IEPA following his interviews with many former Farmall facility managers (IEPA 1980a). The outfall summaries describe the relative appearance, location, and condition of each outfall during the peak operating period of the Farmall facility, as described in numerous site inspection reports compiled from about 1964 to 1980 by various governmental entities, most notably, the IEPA and the City of Rock Island Sanitary Water Board. The characteristics of each outfall, as described in the IEPA memorandum, are summarized below (IEPA 1980a):

- 001: Outfall 001 was a 36-inch discharge located on the north side of Building 45. This outfall was a former City of Rock Island storm sewer and reportedly handled storm water from the former Farmall site along with cooling water from the bearing heat-treating process in Building 42 (IEPA 1980a, 1990a). Prior to the construction of the pretreatment facility, the outfall received batch discharges from wash machines (equipped with filter screens and oil interceptors where required) and from one of the wet paint spray booths.
- 002: Outfall 002 was a 12-inch storm sewer that received storm water from the entrance road at the northeastern corner of the Farmall site. Outfall 002 was not included as part of the former NPDES permit.
- Outfall 003 was a 24-inch outlet located on the north side of Building 71. This outfall reportedly received cooling water from powerhouse air compressors (IEPA 1980a, 1990a). Prior to the construction of the pretreatment facility, Outfall 003 received batch discharges from wash machines (equipped with filter screens and oil interceptors where required), and wet paint spray booths. During a July 1980 IEPA inspection, the Outfall 003 discharge appeared to be heavy in volume and clear in color with a slight chlorine odor and contained a slight oil film, which was also visible in Sylvan Slough downstream of Outfall 003 (IEPA 1980a). The presence of orange staining on both the outfall invert and the rocks beneath Outfall 003 appeared to indicate that iron had entered the outfall discharge (IEPA 1980a).
- 004: Outfall 004 was an 8-inch line located on the north side of Building 77. This outfall was the former discharge point for Farmall's process wastewaters prior to the construction of the pretreatment facilities (IEPA 1980a, 1990a). Building 77 is the former Farmall wastewater pretreatment building (IEPA 1990a). The process wastewaters consisted of batch discharges from wash machines or rinse tanks equipped with

filter screens and oil interceptors. As of 1980, the outfall reportedly carried surface water from drains in the pretreatment building area (IEPA 1980a). The July 1980 IEPA site inspection report states that Outfall 004 received several oil spills from the pretreatment facility; these spills entered a catch basin tributary to the outfall (IEPA 1980a).

- Outfall 005 was a 6-inch storm drain located on the north side of the former powerhouse building (Building 68). This outfall received storm water from the east-west roadway along the north side of the Farmall site (IEPA 1980a, 1990a). Outfall 005 was not included as part of the former NPDES permit.
- Outfall 006 was located north of the former powerhouse and reportedly received air compressor cooling water discharge from the power station (IEPA 1980a, 1990a). The IEPA noted a 3-inch pipe, located immediately west of Outfall 006, which reportedly discharged boiler blowdown water to the slough (IEPA 1980a). The July 1980 IEPA site inspection report states that the unnamed outfall should be included in the NPDES permit and recommended that this discharge be rerouted to the pretreatment facility due to the potential for high total suspended solids, iron, color, and turbidity (IEPA 1980a).
- 007: Outfall 007 was a 36-inch corrugated pipe located north of Building 57. This outfall reportedly discharged air compressor, heat exchanger, and axle heat treating cooling water (IEPA 1980a, 1990a). Prior to the construction of the pretreatment facility, Outfall 007 also received industrial waste discharges from parts wash machines.
- Outfall 008 was a 36-inch line that was paired with Outfall 009 and was located on the north side of Building 50 (IEPA 1990a). Outfalls 008 and 009 are two parallel lines that Farmall referred to as a single outfall (009). At one time, Outfall 008 reportedly served as an overflow from the City of Rock Island's combined sewer system, known as the old 38th Street outfall (IEPA 1980b). During Farmall's peak operating life, Outfall 008 reportedly carried cooling water from the hydraulic power units, welders, and transformers.

Outfalls 008 and 009 parallel each other as they traverse the facility property and are reportedly interconnected at various manholes (IEPA 1980a). Light oil was observed during the July 1980 IEPA inspection from Outfall 008 and a sorbent boom was deployed at the base of the outfall. No description of the color or viscosity of the oil was provided in the IEPA inspection report memorandum. The spill was observed coming out of the City of Rock Island's old 38th Street combined sewer outfall (Outfall 008). It was apparently the result of the continuing seepage from oil-saturated grounds caused by a discharge line rupture on

a 12,000-gallon diesel fuel tank, which occurred near Gate 7 in October 1979 (IEPA 1980b). No volume estimate was given by the IEPA.

In 1990, raw sewage debris was observed around the base of Outfalls 008 and 009 (IEPA 1990b). At this time, Outfall 008 served the QCIC as a storm sewer. The IEPA believed that the sewage debris was due to excess storm water surcharging sanitary sewers and overflowing manholes located south of the industrial center (IEPA 1990b).

009: Outfall 009 was a 48-inch line paired with, and parallel to, Outfall 008 which traverses the former Farmall property. Because Outfalls 008 and 009 are reportedly interconnected at various manholes, Farmall referred to them as a single outfall (009) for purposes of its NPDES permit. Outfall 009 is located on the north side of Building 50 (IEPA 1990a). Outfall 009 formerly received combined sewage overflow from the storm drains on 5th Avenue; these storm drains emptied into a catch basin on Farmall property that flowed into a tributary to Outfall 009 (IEPA 1980a). During Farmall's peak operating life, Outfall 009 reportedly carried cooling water from the hydraulic power units, welders, and transformers (IEPA 1980a). Prior to the construction of the pretreatment facility, Outfall 009 reportedly received industrial waste discharges from wash machines, cleaning booths, and wet paint spray booths, in addition to the non-contact cooling water used in the welding and induction-hardening operations.

During a September 14, 1990 IEPA site inspection, wastewater was observed being discharged from Outfall 009. This discharge was reportedly cooling water from the McLaughlin Body Company welding machines (IEPA 1990a). McLaughlin Body was a tenant of the QCIC. In addition, raw sewage debris was observed around the base of Outfalls 008 and 009, which served as storm sewers in 1990 (IEPA 1990a). The IEPA believed that the sewage debris was due to excess storm water surcharging sanitary sewers and overflowing manholes located south of the QCIC (IEPA 1990a).

- <u>010</u>: Outfall 010 received storm-water runoff from a truck ramp and a roadway along the north side of the plant site and was not included as part of the former NPDES permit (IEPA 1980a).
- Outfall 011 was a 72-inch City storm sewer located west of Building 83. This outfall received cooling water from Farmall welding machines (IEPA 1980a, 1990a). Outfall 011 also received industrial waste discharges from wash machines, cleaning booths, and wet paint spray booths prior to the construction of the pretreatment facility.

3.2 SUMMARY OF ROCK ISLAND RAILROAD OIL SPILL

Based on the file review conducted by Geraghty & Miller, oil was first observed seeping into the Sylvan Slough in 1964. In early 1964, a Rock Island County conservation officer reported the presence of a "huge" oil slick running from the Sylvan Slough down the Mississippi River to Lock and Dam 16 near Muscatine, Iowa (Moline Dispatch 1965). Initial inspections of the outfalls along the length of the former Farmall facility indicated that two outfalls were observed to be major sources of oil: one near the pump house for the former Farmall fire protection system, and the other at the end of 43rd Street (McSwiggin 1964). A description of the oil that was discharged from the sewer near the pump house was not provided because the sewer was submerged (McSwiggin 1964). The oil observed discharging from the 43rd Street sewer, which formerly served the Farmall engine manufacturing area, consisted of a milky emulsion that would apparently break when the warm discharge hit the cold river water thus releasing oil to the water surface (McSwiggin 1964). The milky oil emulsion reportedly appeared to be similar to the type used for cooling metal parts during machining (McSwiggin 1964).

Based on a review of subsequent correspondence between Farmall and the Rock Island Sanitary Water Board for 1964, Farmall apparently implemented a number of preventative measures to limit the potential for the discharge of oil to the outfalls along Sylvan Slough. A follow-up site inspection conducted by Mr. Hank Hannah, Rock Island County Conservation Officer, and Mr. Keith Weeber, Regional Sanitary Engineer of the Illinois Public Health Department (IPHD), revealed that most of the oil was seeping out of an approximate 1,000-foot long section of the river bank to Sylvan Slough downstream of the former Farmall facility (Weeber 1964). According to the inspection report, the location of the oil seepage implicates the source as the Rock Island Railroad diesel fuel leak (Weeber 1964).

A leak in the ground connections of the Rock Island Railroad 150,000-gallon diesel fuel aboveground tank had apparently developed sometime in late 1963 or early 1964 (Moline Dispatch 1965). The leak is believed to have increased in magnitude during the winter of 1964,

resulting in a significant loss of product to the subsurface (Moline Dispatch 1965). Since the notable releases of oil to the Sylvan Slough below the former Farmall facility were discovered 1 month after the Rock Island Railroad diesel fuel leak was discovered and stopped, the county conservation office and the IDPH suspected that a "tremendous" amount of oil had been released to the ground and would continue to seep out into the river for a long time (Weeber 1964). The amount of product loss was estimated to be on the order of tens of thousands of gallons (Giallombardo 1964).

3.3 SUMMARY OF PAST IEPA OIL DISCHARGE OBSERVATIONS

During 1980, the IEPA conducted several inspections of the former Farmall facility in the areas where oil was observed seeping into Sylvan Slough. On May 30, 1980, the IEPA observed oil discharging from the former City of Rock Island's 38th Street combined sewer outfall (Outfall 008). The oil discharge was apparently the result of continuing seepage from oil-saturated soil associated with a spill that occurred near Farmall Gate #7 in October 1979 when the discharge line from a pump on a 12,000-gallon diesel fuel UST ruptured (IEPA 1980b). The discharge was reportedly not a significant volume, but the oil sheen appeared to be steady and continuous (IEPA 1980b). Besides the diesel fuel tank discharge line rupture, the IEPA also mentioned numerous other recent oil spills that had occurred at the Farmall plant into Sylvan Slough. No information regarding the spill volumes was available. These spills included the following:

- April 7, 1980: Spill from pretreatment facilities near Outfall 008 due to pump failure.
- May 23, 1980: Spill from pretreatment facilities into Outfall 008 due to a broken truck hose.
- June 1, 1980: Spill from pretreatment facilities due to pump failure or operator error.

Additionally, a light oil sheen was observed coming from the City of Rock Island's 44th Street storm sewer outfall by the IEPA during its May 30, 1980 inspection. This leakage was reportedly a long standing problem because oil had often been observed seeping into the joints of the 44th Street storm sewer from the former Farmall site. Farmall reportedly believed that the oil observed seeping into the storm sewer was subsurface contamination from UST spills that had occurred in the 1950s when Farmall was testing engines in Building 42 near Gate #1 (IEPA 1980b).

Follow-up site inspections conducted by the IEPA on July 15 and 21, 1980 resulted in the reporting of numerous NPDES permit violations, as well as a number of operation and maintenance recommendations. The most notable violation (pertaining to Geraghty & Miller's information review) was IEPA's statement that visible oil was present in the discharge from Outfall 003 and in Sylvan Slough downstream of Outfall 003.

The IEPA regulatory files reviewed by Geraghty & Miller did not contain any significant information related to oil discharges from the former Farmall plant to Sylvan Slough from May 1982 to September 1990. The IEPA inspected the Sylvan Slough on September 14, 1990. This inspection was prompted by complaints of an oil discharge from a point source approximately one block upstream of the railroad bridge to the Rock Island Arsenal Island. No oil was observed by IEPA during its inspection. The IEPA inspector recalled observing an outfall near the railroad bridge where oil was present during a December 1979 inspection. The IEPA believed that this oil discharge was likely related to the Rock Island Railroad diesel fuel leak discovered in 1964.

On July 20, 1992, the IEPA conducted an inspection of the City of Rock Island storm sewer discharge to Sylvan Slough near the north end of 44th Street due to complaints it had received of oil seeping into the slough at this location. According to file information, the IEPA observed an intermittent sheen of oil in the storm sewer discharge. Additionally, the IEPA discovered oil-contaminated soils and groundwater at the former Midway Oil Company site associated with its oil storage operations. It should be noted that the former Midway Oil

Company site is located above the 44th Street outfall and was likely contributing to the oil observed seeping into the Sylvan Slough.

Complaints received from the City of Rock Island about oil discharge led to a follow-up inspection and a meeting between the IEPA and the City. In a September 10, 1992 internal memorandum, the IEPA discussed several sources of oil discharges to Sylvan Slough; these sources are summarized as follows:

- An outfall located approximately 600 feet upstream of the railroad bridge to the Rock Island Arsenal Island. The Iowa Interstate Railroad depot and maintenance area (formerly owned and operated by the Rock Island Railroad) is reportedly a likely contributor to this outfall (IEPA 1992a).
- An area of the black-stained soil located behind the QCIC (IEPA 1992a). The outfall discharge proximate to the area of stained soil did not appear oily during the September 9, 1992 site inspection. This outfall is located approximately 600 feet downstream of the 72-inch City of Rock Island storm sewer outfall, which is located near the end of 45th Street (44th Street outfall).
- The 72-inch City of Rock Island storm sewer, a reported confirmed source of oil discharge, located near the end of 45th Street (44th Street outfall) (IEPA 1992a).

As a follow-up to its September 9, 1992 site inspection and September 10, 1992 memorandum, the IEPA conducted a November 24, 1992 inspection of the areas with representatives of the City of Rock Island. The City of Rock Island had been monitoring several outfalls for a few months. The following is a summary of the findings of the November 24, 1992 IEPA site inspection:

• The discharge of oil from the City of Rock Island 44th Street storm sewer outfall is reportedly seeping into the storm sewer system at a point located approximately 1,000 feet upstream of the outfall that is located immediately east of the QCIC offices (IEPA 1992b). A black, oily liquid was noted seeping into the east side of the sewer where something apparently dissolved the black mastic on the outside of the sewer pipe and

was observed seeping into the sewer. A small, oily film due to this seepage has reportedly been observed in the discharge from the 44th Street outfall and has been the source of complaints from area fisherman, but not the source of complaints since 1990 by gambling boat patrons (IEPA 1992b).

The potential source of complaints associated with oil releases from the gambling boat patrons and local fishermen, according to the IEPA, appeared to be an area located approximately 600 feet downstream of the 44th Street outfall. Oil seeping from the river bank into a small inlet tributary to Sylvan Slough has been observed during periods of rainfall (IEPA 1992b). The seepage reportedly has a definite fuel oil odor and begins quickly during a rainfall (IEPA 1992b). No outfall was apparent in the immediate area where the oil seepage was observed. Although the former Farmall Outfall 001 is in the vicinity at a higher elevation, based on IEPA observations, it did not appear to be the source of oil (IEPA 1992b).

A potential source of the oil that is reportedly seeping into Sylvan Slough is the former Midway Oil Company site, which is located south and east of the river bank area where the oil seepage has been observed (IEPA 1992b). Additionally, the river bank behind the former Farmall plant has apparently been the site of the dumping of miscellaneous debris and waste, such as cinders and floor sweepings, over a period of several years.

An environmental study performed by Pilko & Associates, Inc. (Pilko) determined the existence of some petroleum product contamination in the soil on the east side of the QCIC near the former Midway Oil property, and of an old burn/dump area located on the Navistar property (IEPA 1992b).

Another source of complaints associated with oil releases is an area located approximately 600 feet upstream of the Iowa Interstate Railroad bridge and several thousand feet downstream of the previous two source areas. A periodic oily discharge, which exhibits a strong fuel oil odor, reportedly seeps out of the stream bank from an apparent outfall or seepage face (near the former old burn/dump area) covered by debris (IEPA 1992b). A plume of oil was noted in this area on the surface of Sylvan Slough along the shoreline during the September 24, 1992 site inspection. The Iowa Interstate Railroad maintenance depot (former Rock Island Railroad facility) is located due south (upgradient) of this area. In addition, old building plans indicate that there may be an old sewer outfall to Sylvan Slough which could represent a conduit for the diesel fuel to the

Sylvan Slough (IEPA 1992b). (The location of this sewer line was later confirmed [IEPA 1993b].)

Subsequent to the findings of its November 24, 1992 inspection, the IEPA notified Navistar, Iowa Interstate Railroad, and Midway Oil about its investigation of the oil discharges to Sylvan Slough. A meeting and site inspection regarding the oil discharges to Sylvan Slough was held on January 26, 1993. Representatives from Navistar, Midway Oil, Iowa Interstate Railroad, QCIC, City of Rock Island, and IEPA attended the January 26, 1993 meeting. During the meeting, the IEPA recommended that Navistar and any other potentially responsible parties (PRPs) agree to take action to eliminate the discharge of oil to Sylvan Slough by participating in the Illinois Pre-Notice Program (formerly Illinois Voluntary Cleanup Program). In the opinion of the IEPA, the major areas of environmental concern appeared to be the area proximate to former Farmall outfall 001 and the area upstream of the railroad bridge (IEPA 1993a).

The IEPA held another meeting on February 10, 1993 regarding oil discharges to Sylvan Slough related to an Emergency Response Reconnaissance Investigation. This investigation occurred subsequent to an oil release that had reportedly been ongoing since February 4, 1993. The February 4, 1993 release reportedly occurred from a corrugated steel sewer outfall, located approximately 300 feet downstream of the 44th Street City of Rock Island storm sewer outfall, adjacent to three power transmission lines.

On February 8, 1993, the Coast Guard and City of Rock Island located the old sewer system on the BNR property. Four manholes, which were apparently part of this system, were observed. Oily odors were reportedly evident in three of the four manholes while oil was present in two of the four manholes. The manholes are located adjacent to the location of the former BNR roundhouse facility. The IEPA once again implicated the massive 1964 release of diesel fuel at the Iowa Interstate (Rock Island Railroad) property to be a potential source of the oil found in the manholes at the BNR property (IEPA 1993b).

3.4 PREVIOUS SOIL AND GROUNDWATER INVESTIGATIONS

In May 1988 and June 1989, Pilko performed a soil and groundwater investigation at the Navistar property to evaluate whether contamination was present from past site activities. A total of 13 soil borings and nine monitoring wells was completed on the Navistar-owned section of the former Farmall property. Figure 3-3 depicts the location of the Pilko soil borings and monitoring wells. The most significant finding from the May 1988 field investigation was the widespread detection of oil in the subsurface. Soil sample analyses indicated that the detectable oil-related constituents were concentrated at or near the shallow water table (Pilko & Associates, Inc. 1989). The area with the highest concentrations of constituents in the soil was the western landfill area (i.e., former open burn/dump area), which is located north-northwest of the BNR and Iowa Interstate properties. Groundwater sample analyses revealed the presence of organic compounds throughout the site, with the highest concentrations at the southern edge of the property adjacent to the railroad property (MW-5).

On March 10, 1992, Pilko resampled eight of the nine monitoring wells at the Navistar property; one of the wells (MW-3) had been destroyed since Pilko's earlier sampling effort. During the groundwater sampling, a fuel oil odor was evident in MW-6 and a layer of oil was measured in MW-9 on the top of the water table. The oil noted at MW-9 diminished subsequent to purging of the well. The results of Pilko's 1992 sampling indicated a change in groundwater quality at the Navistar property since its 1988 and 1989 sampling efforts. Groundwater quality in the eastern half of the site had improved; in particular, gasoline constituents (benzene, ethylbenzene, toluene, and xylenes [BETX]) were no longer detected in MW-2. However, the area defined by MW-6 and MW-10 appeared to have had a significant increase in the detectable concentrations of total petroleum hydrocarbons (TPH). Based on the analytical results, Pilko believed that the contamination present in and around MW-6 and MW-9 appeared to be diesel fuel (Pilko & Associates, Inc. 1992).

On February 11, 1993, Pilko resampled the remaining seven monitoring wells at the Navistar property; another monitoring well (MW-4) had been destroyed after the 1992 sampling

event. During the groundwater sampling, as noted during the 1992 groundwater sampling event, a fuel oil odor was evident in MW-6 and a layer of oil was measured in MW-9 (12 to 14 inches). In addition, a layer of oil was also evident in MW-10 (1 to 2 inches). The oil thicknesses reportedly decreased to less than 1/8 inch at the time the sample was collected. Gasoline constituents (BETX) were detected again in MW-2, and for the first time in MW-9. Pilko concluded that the analytical results of the previous four groundwater sampling events were inconsistent. The primary conclusion reached by Pilko was that the highest concentration of petroleum constituents in the subsurface soil was in the area defined by MW-5, MW-6, MW-9, and MW-10 where free product was evident. This area is located in the west-central portion of the site, north-northwest of the BNR and Iowa Interstate properties (Pilko & Associates, Inc. 1993).

4.0 SITE RECONNAISSANCE

On October 18, 1993, representatives from Navistar, BNR, and Geraghty & Miller performed a visual inspection of the Navistar, BNR, and QCIC properties (former Farmall site). Particular attention was paid to the Navistar and BNR properties located on the west end of the QCIC where the most significant oil seepage into the Sylvan Slough was observed by the IEPA in late 1992 (IEPA 1992b). The BNR property is located in an area between the Navistar and Iowa Interstate Railroad properties and immediately west of the QCIC western asphalt-paved parking lot (see Figure 2-2).

During the 1993 Midwest Flood, the water level of Sylvan Slough was within 2 to 3 feet of the elevation of the roadway that runs along the north side of the QCIC. Geraghty & Miller obtained a color aerial photograph that was taken on July 12, 1993 during the maximum river stage. In the aerial photograph, the Navistar property appeared unaffected by the flood, whereas virtually the entire BNR property appeared to be stained with oil. According to BNR, the water table essentially rose to the ground surface during the flood, causing oils contained within the groundwater to rise to the surface. As mentioned previously in this report, the ground surface elevation of the BNR property is about 5 feet lower than the ground surface elevation of the surrounding Navistar and QCIC properties. During the October 18, 1993 inspection, Geraghty & Miller observed numerous stained surface areas that were apparently residuals from the flood.

In addition to the numerous stained surface areas, another potential environmental concern observed by Geraghty & Miller was three pipe conduits to the subsurface in the area where a floating layer of oil was observed. The pipe conduits were located near a concrete building foundation in the center of the BNR property. BNR did not have any knowledge of either the nature of the building that had formerly existed on the foundation or the pipe conduits to the subsurface.

Another area of note that Geraghty & Miller observed during the inspection was the location of a former railroad roundhouse and turntable in the eastern half of the BNR property. This former roundhouse and turntable had been used for the repair and maintenance of BNR

railcars and locomotives. The former roundhouse and turntable appear to be located directly upgradient of the outfall discharge to Sylvan Slough and the former storm sewer, which had been excavated as a result of the United States Coast Guard (USCG) February 1993 emergency response (IEPA 1993b).

During the October 18, 1993 site inspection, Geraghty & Miller also identified two possible sources of oil located upgradient of the Navistar and BNR properties using the information gathered during the review of historical information. These sources consist of the former railroad roundhouse and turntable and the former and current oil storage tank located on the Iowa Interstate property to the south of the BNR property. Roundhouses and turntables were typically used for the repair and maintenance of railcars and locomotives. Based on Geraghty & Miller's review of historical aerial photographs and Sanborn fire insurance maps, there were apparently two to three times more repair bays at the former Rock Island Railroad roundhouse than the former BNR roundhouse.

The second potential source is the major leak in 1964 from Rock Island Railroad's former 150,000-gallon aboveground diesel fuel tank. A number of excavation sumps and trenches were installed in late 1964 and early 1965 along the northern boundary of the former Rock Island Railroad property to prevent the flow of diesel fuel to the Sylvan Slough (Moline Dispatch 1965). Diesel fuel was reportedly observed flowing into some of these trenches from a 30-inch thick soil stratum. Oil was also reportedly observed seeping into Sylvan Slough from a 1,000-foot section of the bank in a zone that extended from below the water surface to a point approximately 18 inches above the water surface (Giallombardo 1964). Although a recovery system was installed subsequent to the discovery of the spill, there is no information available regarding the effectiveness of the recovery system, the quantities of diesel fuel recovered, or any confirmatory soil or groundwater sampling.

5.0 SUBSURFACE SOIL INVESTIGATION

Based on Geraghty & Miller's review of previous environmental studies, regulatory agency files, historical site information (including aerial photographs and Sanborn fire insurance maps), and the site inspection, Geraghty & Miller performed a soil and groundwater investigation at the Navistar and BNR properties. Because there is an existing monitoring well network on the Navistar and QCIC properties north, east, and west of the BNR property, Geraghty & Miller's soil and groundwater investigation consisted of the completion of soil borings, installation of monitoring wells, and collection of soil and groundwater samples for laboratory analyses at the BNR property; and the collection of groundwater samples from the existing monitoring well network at the Navistar and QCIC properties. Monitoring wells were placed downgradient of the potential sources identified by Geraghty & Miller during the review of existing information and the site inspection tasks.

Geraghty & Miller advanced four soil borings (GM-1 through GM-4), to be completed as monitoring wells, along the southern boundary of the BNR property to evaluate whether releases from potential off-site sources, such as the former Rock Island Railroad roundhouse and/or former and current bulk petroleum storage areas, are migrating onto the BNR site. In addition, two soil borings, to be completed as monitoring wells, were advanced on the northern end of the BNR property, one downgradient of the concrete building foundation where the unknown pipe conduits were observed (GM-5) and the other downgradient of the former BNR roundhouse (GM-6). The locations of the soil borings/monitoring wells installed by Geraghty & Miller are depicted on Figure 5-1.

5.1 FIELD SAMPLING METHODOLOGY

The soil borings were advanced using a truck-mounted drill rig equipped with continuous flight, hollow-stem augers. Soil borings were completed to a depth of approximately 7 to 10 feet into the water table. All drilling work was supervised by a Geraghty & Miller field geologist and performed by Rock & Soil Drilling Corporation of St. Charles, Illinois. The drilling work was conducted on November 16 and 17, 1993.

Continuous split-spoon formation samples were collected and logged by a Geraghty & Miller field geologist from the surface to the water table. The logs include descriptions of the soil and notations on secondary features such as the presence of soil staining and odors. Copies of the soil boring logs are provided in Appendix A. The geologist also field screened the samples with a photoionization detector (PID) for the presence of volatile organic compounds (VOCs). The field screening results were recorded on the boring logs. Based on the results of the field screening for VOCs, a minimum of one soil sample was collected from each boring location for laboratory analyses. Soil samples were placed directly from the split-spoon sampling device into the glass sampling jar provided by the laboratory such that there was no headspace, and then immediately placed in a cooler packed with ice.

Decontamination procedures were utilized to minimize the potential for cross-contamination between borings and individual sampling locations. The soil sampling equipment was cleaned with a non-phosphate detergent and distilled water solution and triple-rinsed with distilled water between samples. All downhole drilling equipment was steam-cleaned between boring locations.

5.2 SITE GEOLOGICAL SETTING

Based on a review of the boring logs (Appendix A), the soil stratigraphy at the BNR site appears to consist primarily of fine to coarse sands and silty sands, which are underlain by bedrock. Fragments of bedrock were encountered at a depth of approximately 14 feet below land surface (bls) in GM-1 and GM-2. The vadose zone soils (soils above the water table) were stained and exhibited a strong hydrocarbon (petroleum) odor from approximately 2 feet bls to the top of the water table. The strong hydrocarbon odor was further substantiated by the field screening results for VOC vapors, which were as high as 10,000 parts per million (ppm). In each of the borings completed on the BNR property, soil was encountered that was saturated with a hydrocarbon (petroleum) product.

The soils encountered at the BNR property appeared to be Mississippi River sand and gravel outwash deposits. The bedrock encountered at a depth of approximately 14 feet bls in GM-1 and GM-2 appeared to be limestone or shale of the Cedar Valley Formation. A review of the boring logs for the existing Pilko monitoring well network indicated that the sand and gravel outwash deposits appeared to be overlain by man-made fill materials, which consisted of black sands and cinders from the former Farmall foundry operation. No fill materials were encountered during Geraghty & Miller's investigation since none of the drilling operations took place on the Navistar property where the fill materials had been deposited.

5.3 SOIL ANALYTICAL RESULTS

Eight soil samples were collected for laboratory analyses from GM-1 through GM-6. A soil sample from the sampling interval immediately above the water table was submitted for laboratory analysis from each boring location along with one soil sample collected from 2 to 4 feet bls at GM-1 and GM-5. The soil samples were submitted to Analytical Technologies, Inc. (ATI) of Pensacola, Florida for chemical analyses under strict chain-of-custody. ATI participates in Geraghty & Miller's Analytical Quality Assurance/Laboratory Contract Program (AQA/LCP). Soil samples submitted to the laboratory were analyzed for VOCs using United States Environmental Protection Agency (USEPA) Method 8240; polynuclear aromatic hydrocarbons (PNAs) using USEPA Method 8310; polychlorinated biphenyls (PCBs) using USEPA Method 8080; and lead using the USEPA Toxicity Characteristic Leaching Procedure (TCLP). Table 5-1 summarizes the analytical results for the soil samples collected at the BNR site during the subsurface soil investigation. The complete set of analytical data for the subsurface soil investigation is provided in Appendix B.

Seven VOCs were detected in the subsurface soil samples collected during the Initial Site Investigation. The VOCs detected included acetone, benzene, 2-butanone (commonly known as methyl ethyl ketone [MEK]), ethylbenzene, methylene chloride, trichlorofluoromethane, and xylenes. Acetone, MEK, and methylene chloride are common laboratory contaminants while benzene, ethylbenzene, and xylenes are associated with petroleum products. The range of

concentrations (in milligrams per kilogram [mg/kg]) of VOCs detected in the subsurface soil at the BNR site is listed below. Frequency indicates the number of samples where each constituent was reported above the laboratory detection limit.

Constituent	Frequency ¹	Minimum Concentration	Maximum Concentration
Acetone	7 of 8	0.039 mg/kg in GM1-0204	0.260 mg/kg in GM2-1012
Benzene	1 of 8	0.002 mg/kg in GM5-0204	
2-Butanone (MEK)	3 of 8	0.022 mg/kg in GM5-0204	0.040 mg/kg in GM2-1012
Ethylbenzene	6 of 8	0.008 mg/kg in GM6-1012	0.016 mg/kg in GM4-1012
Methylene chloride	5 of 8	0.007 mg/kg in GM1-0204	0.033 mg/kg in GM5-0810
Trichlorofluoromethane	3 of 8	0.003 mg/kg in GM5-0204	0.009 mg/kg in GM2-1012
Xylenes, total	2 of 8	0.056 mg/kg in GM2-1012	0.088 mg/kg in GM1-0810

Ethylbenzene was detected at the top of the water table at each of the six well locations, while xylene was detected at the top of the water table only at GM-1 and GM-2. This result would appear to indicate that there is some type of petroleum product residual near the water table throughout the BNR property. Fluctuations in groundwater levels while a floating product layer is present results in a zone of soil at or near the water table that is "smeared" with residual product from the floating layer. Benzene was detected in GM-5 near the surface, indicating some type of "hot spot" surface contamination that was likely caused by either a surface spill or a residual from the water-table fluctuation that occurred during the 1993 Midwest Flood.

The remaining VOC constituents (acetone, MEK, methylene chloride, and trichlorofluoromethane) were detected at various locations throughout the BNR site, both near the surface and at the top of the water table. As discussed previously, acetone, MEK, and methylene chloride are common laboratory contaminants, while trichlorofluoromethane is a freon isomer. The lack of a set pattern for the detection of these VOCs suggests that their detection may be laboratory artifacts.

Detectable concentrations of PNAs were found in all eight of the soil samples submitted for laboratory analysis. The concentrations of PNAs detected in the six soil samples collected from the sampling interval immediately above the water table (one sample from each boring

location) were similar in magnitude (1.0 to 200 mg/kg), while the two soil samples collected near the surface were on the order of two to four orders of magnitude less (0.010 to 3.0 mg/kg).

The difference between the PNA concentrations detected near the surface with those detected near the water table is demonstrated in GM-1 and GM-5. For example, the PNA concentrations found at a depth of 2 to 4 feet bls in GM-5 ranges from a minimum of 0.051 mg/kg to a maximum of 3.0 mg/kg, while the PNA concentrations found above the water table at a depth of 8 to 10 feet bls in GM-5 ranges from a minimum concentration of 2.0 mg/kg to a maximum of 200 mg/kg. The substantially higher PNA concentrations detected near the water table compared to those detected in the upper portion of the vadose zone supports the scenario of a floating hydrocarbon product layer.

The final two constituents for which the soil samples were analyzed by the laboratory were PCBs and lead. PCBs were detected in only one of the eight soil samples while lead was detected in two of the eight samples. PCB Aroclor-1248 was detected in GM-5 at a depth of 2 to 4 feet bls, at a concentration of 0.45 mg/kg. Lead was detected only in the two soil samples collected at GM-5, at concentrations of 1.1 mg/kg at a depth of 2 to 4 feet bls and 3.5 mg/kg at a depth of 8 to 10 feet bls.

6.0 GROUNDWATER INVESTIGATION

Geraghty & Miller installed six groundwater monitoring wells on the BNR property to supplement the existing monitoring well network on the Navistar property. The investigation was performed to provide an initial indication of the nature and extent of any groundwater contamination that may exist. The monitoring well locations were selected based on the potential sources identified by Geraghty & Miller at the BNR property and at the Iowa Interstate property located to the south. Four of the six monitoring wells (GM-1 through GM-4) were placed along the southern property boundary to evaluate whether any affected groundwater was migrating onto the BNR property from the Iowa Interstate (former Rock Island Railroad) property. The remaining two monitoring wells (GM-5 and GM-6) were situated along the northern BNR property boundary downgradient of the concrete building foundation (GM-5) and the former BNR roundhouse location (GM-6).

6.1 WELL CONSTRUCTION AND SAMPLING METHODOLOGY

Six monitoring wells were installed on the BNR property as part of Geraghty & Miller's field investigation on November 16 and 17, 1993. The borings for each monitoring well were advanced using a truck-mounted drill rig equipped with continuous flight, hollow-stem augers. The borings for each monitoring well location were advanced to a depth of approximately 7 feet into the saturated zone. The field procedures used for borehole advancement, soil sampling, selection of samples for laboratory analyses, and decontamination are described in Section 5.1 (Field Sampling Methodology) of this report. The sample/core logs for the six monitoring well locations are provided in Appendix A.

The monitoring wells were constructed with 2-inch inside diameter, flush-joint threaded, schedule 40 polyvinyl chloride (PVC) riser pipe and 10 slot (0.01 inch), factory-cut, stainless-steel, 10-foot well screens. The monitoring wells were installed such that the well screens were 2 to 3 feet above the current water level to account for the fluctuation of the water table. The well screens were surrounded by a coarse sand pack extending from approximately 6 inches below the base of the well screen to approximately 2 feet above the top of the screen. A

granular bentonite seal was placed over the sand pack to approximately 2 feet bls followed by a concrete seal. A steel, outer protective well casing was placed over each monitoring well upon completion. Well construction logs are provided in Appendix C.

Following completion of the monitoring well installation, a water-level measurement was taken for each well using an electronic water-level indicator. Each well was then developed by evacuating approximately three to five well volumes with a dedicated, disposable bailer. The BNR monitoring wells were developed by Geraghty & Miller on November 17 and 18, 1993. The well development logs are provided in Appendix D. After the well development was complete, the wells were allowed to equilibrate prior to groundwater sampling.

Geraghty & Miller returned to the Navistar and BNR properties to conduct groundwater sampling on November 30 and December 1, 1993. Groundwater samples were collected for laboratory analyses from each BNR monitoring well (GM-1 through GM-6), as well as from the existing Navistar monitoring well network (MW-5 through MW-10), which is located west of the QCIC buildings. Geraghty & Miller was unable to collect groundwater samples from Navistar wells MW-7 and MW-10 due to damage to the outer well casings.

Prior to collecting a sample from each monitoring well, Geraghty & Miller used an oil/water interface probe to record the water level and to determine whether any free product was evident. A 0.03-foot layer of product was measured at the top of the water table in GM-4, GM-5, and MW-6, while a 3.10-foot layer of product was measured in MW-9; no free product was evident in the remaining monitoring wells that were sampled (GM-1, GM-2, GM-3, GM-6, MW-5, and MW-8). Due to the 3.10-foot layer of product evident in MW-9, a groundwater sample was not collected for laboratory analysis.

Approximately three well volumes were purged from each monitoring well prior to groundwater sampling with a dedicated, disposable bailer. Because MW-6 was bailed dry after evacuating one well volume, the groundwater sample was collected after the well recovered. Geraghty & Miller took field measurements of pH, temperature, and conductivity after each well

volume was purged. The sample containers provided by the laboratory were filled at each well location directly from the disposable bailer. The groundwater samples were then immediately placed in a cooler packed with ice. For quality assurance/quality control (QA/QC) purposes, Geraghty & Miller collected a duplicate groundwater sample from GM-5. Water sampling logs are provided in Appendix E.

6.2 SITE HYDROGEOLOGY

As discussed in Section 5.2 (Site Geologic Setting) of this report, the soils encountered at the BNR property appear to be Mississippi River sand and gravel outwash deposits, which overlie bedrock of the Cedar Valley Formation. Bedrock was encountered at a depth of approximately 14 feet bls at GM-1 and GM-2. Based on a review of the boring logs for the Pilko monitoring well network, the sand and gravel outwash deposits appear to be overlain by man-made fill material.

The hydraulic conductivity of the subsurface formation into which the monitoring wells were installed was evaluated by performing slug tests at selected monitoring well locations (GM-1, GM-2, and GM-6). The slug test locations were selected based on the lack of free product and their relative location such that a representative reading was obtained across the length of the site. The data obtained during the slug tests were analyzed by the Hvorslev and/or Bouwer & Rice methods to calculate hydraulic conductivity values. The hydraulic conductivity value (K) for the BNR site ranged from a minimum of 4.1 x 10⁻⁴ cm/sec at GM-6 to a maximum of 2.8 x 10⁻² cm/sec at GM-1. The hydraulic conductivity values demonstrated at the BNR property are consistent with those that would be expected for soils consisting of sands and gravels. The slug test data are provided in Appendix F.

Geraghty & Miller contracted Beling Consultants (Beling) of Moline, Illinois to survey the elevation of the top of the inner casing at each monitoring well location. Beling used a permanent United States Geological Survey (USGS) benchmark located on the west face of the former Rock Island Railroad baggage room to the south of the Navistar and BNR properties.

The elevations of the top of the inner casing at each monitoring well location relative to the USGS standard elevation are provided in Table 6-1.

Two rounds of water-level data were collected by Geraghty & Miller. The first round was collected on November 30, 1993 prior to groundwater sampling and the second on December 21, 1993 prior to slug testing. Groundwater was encountered at an average depth of approximately 12 feet bls across the BNR property and 17 feet bls across the Navistar property, both of which appear to be consistent with the water surface of the Mississippi River.

Using the survey data and water-level measurements, Geraghty & Miller prepared Figure 6-1, which provides groundwater table elevation information. Based on the water levels shown on Figure 6-1, a discernable groundwater flow direction is not apparent. Generally, Geraghty & Miller would expect that groundwater flows across the BNR and Navistar properties to the north-northwest, a flow direction consistent with the location of the Sylvan Slough and the prevailing current of the river. The general groundwater flow towards Sylvan Slough was evident during Pilko's 1989 groundwater sampling effort (Pilko & Associates, Inc. 1989).

The disruption of the localized groundwater flow system is likely due to the surcharging of the groundwater system caused by the 1993 Midwest Flood. Generally, the groundwater system will lag behind the surface-water system until the reestablishment of equilibrium conditions. The consistent drop in the water levels at each monitoring well location between the November 30, 1993 and December 21, 1993 water-table elevation measurements is likely evidence supporting the fact that the groundwater system has yet to reach a state of equilibrium.

6.3 GROUNDWATER ANALYTICAL RESULTS

The groundwater samples were submitted to the laboratory under strict chain-of-custody at the end of each day of field sampling. Groundwater sample analyses were performed by ATI. Groundwater samples were analyzed for VOCs using USEPA Method 8240; PNAs using USEPA Method 8310;, and lead using USEPA Method 6010. Groundwater samples submitted to the

laboratory for lead analysis were filtered in the field. A summary of the groundwater data is presented in Table 6-2. The complete set of groundwater analytical data is provided in Appendix G.

Two VOCs were detected in the groundwater samples collected during the Initial Site Investigation. The VOCs detected were acetone, a common laboratory contaminant, and benzene. Acetone was detected in GM-1 (0.017 milligrams per liter [mg/L]), GM-3 (0.014 mg/L), GM-4 (0.013 mg/L), and MW-6 (0.017 mg/L). Benzene, a common petroleum-related contaminant, was detected only in GM-5 at a concentration of 0.003 mg/L. However, the duplicate groundwater sample of GM-5, designated as GM-0, reported benzene below the laboratory detection limit.

PNA concentrations were detected at each monitoring well location except for MW-8. The presence of PNAs in the groundwater was expected based on the visual contamination evident during the boring completion activities and the measurable thickness of product evident in GM-4, GM-5, MW-6, and MW-9. The PNAs detected in GM-1, GM-5, GM-6, and MW-6 are an order of magnitude higher than those detected in GM-2, GM-3, GM-4, and MW-5. The monitoring wells with the higher concentrations of PNAs are all located within the area defined by the monitoring wells with a measurable layer of free product (GM-4, GM-5, MW-6, and MW-9). The only notable exception is GM-4, where the concentrations of PNAs were an order of magnitude less than those wells exhibiting the higher concentrations even though there was a measurable layer of hydrocarbons.

PCBs were detected at a concentration of 0.001 mg/L in GM-5. PCBs were not detected at any other monitoring well location. In fact, PCBs were reported below the laboratory detection limit of the duplicate groundwater sample collected from GM-5 (GM-0). Lead was not detected at any monitoring well location.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on this Initial Site Investigation, Geraghty & Miller concludes that the discharge of impacted groundwater may be the most likely source of the oil seeping into Sylvan Slough. Under normal conditions, Geraghty & Miller would expect groundwater to flow from the Iowa Interstate property across the BNR and Navistar properties to the north-northwest, and discharge into the Sylvan Slough. This section of the Sylvan Slough where the groundwater would be expected to discharge is one of the sources of recent complaints to the IEPA and has been identified as being located approximately 600 feet upstream of the Iowa Interstate Railroad (Rock Island Railroad) bridge and several hundred feet downstream of the 44th Street outfall and of the outfall located immediately downgradient of the former Midway Oil Company site (Outfall 001).

A periodic oily discharge exhibiting a strong fuel oil odor reportedly seeps from the stream bank from an apparent outfall or the bank along Sylvan Slough located approximately 600 feet upstream of the Iowa Interstate Railroad bridge. A plume of oil was noted in this area on the surface of Sylvan Slough along the shoreline during a September 24, 1992 IEPA site inspection. Location of this plume would be consistent with Geraghty & Miller's expectations that the impacted groundwater and floating free-product layer underlying the BNR and Navistar properties are discharging to the Sylvan Slough.

The most significant groundwater plume appears to be centered about GM-4, GM-5, GM-6, MW-6, and MW-9 where free product was evident and the highest PNA concentrations were detected. This area is located adjacent to the area of the observed discharges to Sylvan Slough approximately 600 feet upstream of the railroad bridge. A floating product layer with thicknesses of 0.03 to 3.1 feet was observed on the water table at GM-4, GM-5, MW-6, and MW-9. Based on the results of the groundwater sampling, MW-8 appears to be located outside of the plume.

The results of Geraghty & Miller's groundwater analyses are comparable to the results of the previous groundwater sampling performed by Pilko at the Navistar and QCIC properties

(Pilko & Associates, Inc. 1989, 1992, 1993). The highest concentration of petroleum hydrocarbons detected by Pilko in the subsurface soil is defined by MW-5, MW-6, MW-9, and MW-10 (Pilko & Associates, Inc. 1993). Pilko also noted a floating layer of hydrocarbons in this area, which is consistent with the location of the floating layer of free product observed by Geraghty & Miller during the recent groundwater sampling event. Although the specific laboratory analyses conducted by Pilko differed slightly from those performed by ATI for Geraghty & Miller, the analytical results are essentially the same, with concentrations of various hydrocarbon (petroleum) related compounds being reported in excess of the laboratory detection limits.

In addition to the discharge of impacted groundwater, an old sewer outfall to the Sylvan Slough was shown on old building plans on the site now owned by BNR, and this outfall could represent another conduit for the discharge of impacted groundwater and floating product. The USCG and City of Rock Island found the location of the old sewer system on the BNR property. Oily odors were reportedly evident in three of the four manholes and oil was evident in two of the four manholes. The manholes are adjacent to the location of the former BNR roundhouse facility.

Based on the expected direction of groundwater flow, the presence of PNA contamination in GM-1, GM-2, GM-3, and GM-4 indicates an upgradient source. The implicated upgradient source is the 1964 release of an estimated tens of thousands of gallons of diesel fuel from the former Rock Island Railroad storage tank. The concentrations of PNAs, the presence of free product in the upgradient wells (e.g., GM-4) during groundwater sampling, and documentation describing a major petroleum spill event occurring in 1964 indicate the following source scenario:

1. A major upgradient source has resulted in a petroleum contaminant plume that has migrated beneath the Navistar and BNR properties; and,

2. Several minor off-site and on-site contaminant sources that have likely contributed to the petroleum contaminant plume that has migrated beneath the Navistar and BNR properties.

Due to the large quantities of oil observed at the BNR and Navistar sites, the soil staining and soil sampling results that indicate a hydrocarbon "smear" zone across the BNR property, the visible free product observed floating on the water table, and the documented large scale release of diesel fuel on the property located in the expected upgradient direction of the site, it is recommended that investigations be expanded to include the Iowa Interstate Railroad property.

Review of site files indicates that several upstream sources may be contributing to the release of oil into the Sylvan Slough. Source areas identified include any sewer lines associated with the 72-inch City of Rock Island storm sewer and the 44th Street outfall; any sewer lines leading to outfalls 001, 003, 004, 008, and 009 on the former Farmall site; the UST discharge area near Building 42 on the former Farmall site; the small tributary to the Sylvan Slough located 600 feet downstream of the 44th Street outfall; oil seepage areas observed on the former Midway Oil Company site; and an area of petroleum-impacted soil on the east side of the QCIC site near the former Midway property. Complete characterization of the area should, at a minimum, include investigation of these sites.

Before proceeding with additional site characterization, Geraghty & Miller recommends that BNR and Navistar contact either (or both) the Iowa Interstate Railroad or Rock Island Railroad to inform them of the results of the Initial Site Investigation. The extent of contamination that exists upgradient of the BNR and Navistar properties can not be evaluated without some type of working arrangement to allow access to the Iowa Interstate Railroad property.

Until such an arrangement is reached with the Iowa Interstate Railroad and/or the Rock Island Railroad, the only additional site characterization work that should be completed at this time would be the placement of additional monitoring wells to the east in order to define the

east-west lateral extent of hydrocarbon-impacted groundwater. The western edge of the plume appears to be defined by MW-8, where no PNA concentrations above the laboratory detection limits were reported.

Geraghty & Miller also recommends continued measurements of the water-table elevations and floating product layer thicknesses at each monitoring well location on a monthly basis to monitor the groundwater flow direction. Frequent water-table elevation measurements would allow Geraghty & Miller to monitor the local groundwater flow direction as the groundwater system continues to equilibrate subsequent to the 1993 Midwest Flood.

8.0 REFERENCES

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Table 5-1. Subsurface Soil Data Navistar/BNR Property, Rock Island, Illinois

Constituent	GM1-0204	GM1-0810	GM2-1012	GM3-1012	GM4-1012	GM5-0204	GM5-0810	GM6-1012
VOCs/8240 (mg/kg)								
Acetone	0.039	0.084	0.26	0.077		0.12	0.23	0.20
Benzene						0.002		
2-Butanone (MEK)			0.04			0.022		0.037
Ethylbenzene		0.013	0.011	0.013	0.016		0.01	0.008
Methylene chloride	0.007	0.028		0.027			0.033	0.031
Trichlorofluoromethane			0.009			0.003		0.007
Xylenes, total		0.088	0.056					
PNAs/8310 (mg/kg)								
Acenaphthene	0.077					3.0		
Acenaphthylene		24		21	17	0.95	63	48
Anthracene		7.1	16	10	5.0	0.17	11	18
Benzo(a)anthracene		8.5	18	8.1	7.8	0.49	13	15
Benzo(a)pyrene		4.1	8.5	3.0	3.7		3.3	8.2
Benzo(b)fluoranthene		2.9	8.0	7.2	5.2	0.67	5.7	14
Benzo(ghi)perylene						0.60		
Benzo(k)fluoranthene		6.5	15		2.8	0.26	2.0	5.0
Chrysene		3.9	13	6.3	3.9	0.17	9.1	9.6
Dibenzo(ah)anthracene					5.2	1.8		
Fluoranthene	0.015	52		120	98	1.9	200	110
Fluorene	0.016	31	77	28	19	0.46	48	54
Indeno(123-cd)pyrene						0.41		
Naphthalene	0.011	1.6	12			0.051		
Phenanthrene	0.011	10	86	8.3	24	0.39	59	16
Pyrene		59	150	64	58	1.7	110	120
Other Noncarcinogenic PN	110.0	34	86	29.3	41	1.94	122	64
PCBs (mg/kg)								
Aroclor-1248						0.45		
Metals/TCLP (mg/L)								
Lead						1.1	3.5	

Notes:

- 1. "VOCs" indicate volatile organic compounds.
- 2. "PNAs" indicate polynuclear aromatic hydrocarbons.
- 3. "PCBs" indicate polychlorinated biphenyls.
- 4. "TCLP" indicates the Toxicity Characteristic Leaching Procedure.
- 5. VOCs, PNAs, and PCBs are reported in milligrams per kilogram (mg/kg).
- 6. Metal (lead) concentrations are reported in milligrams per liter (mg/L).
- 7. A blank space indicates that the constituent concentration was reported below the laboratory detection limit.
- 8. The Class I soil cleanup objectives consist of Illinois Class I groundwater standards and Illinois recommended baseline cleanup objectives for s at non-LUST (Leaking Underground Storage Tank), petroleum-contaminated sites.

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Table 6-2. Groundwater Data Navistar/BNR Property, Rock Island, Illinois

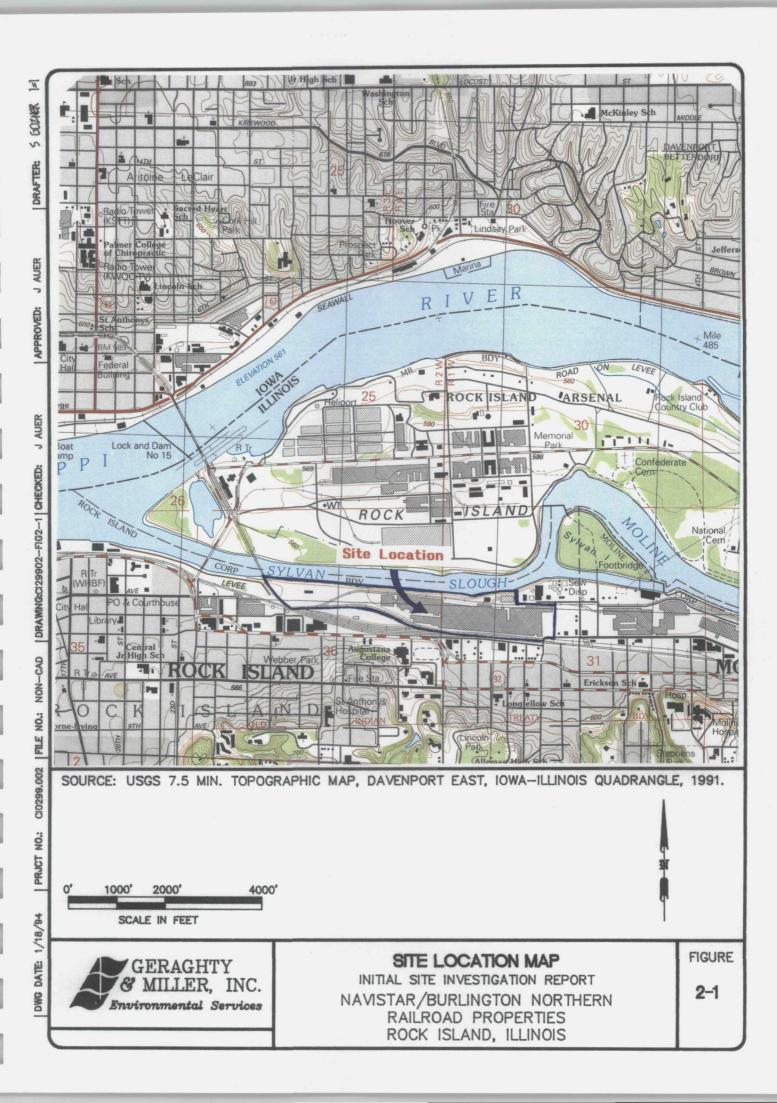
Constituent	GM-1	GM-2	GM-3	GM-4	GM-5	GM-6	MW-5	MW-6	MW-8	GM-0
VOCs/8240 (mg/L)										
Acetone	0.017		0.014	0.013				0.017		
Benzene					0.003					
PNAs/8310 (mg/L)										
Acenaphthene										
Acenaphthylene	1.3	0.13	0.27	0.31	0.73	0.48	0.12	1.3		0.31
Anthracene	0.58	0.013	0.013	0.026	0.16	0.12	0.008	0.5		0.016
Benzo(a)anthracene	0.46	0.015	0.013	0.026	0.17	0.11	0.01	0.68		0.014
Benzo(a)pyrene		0.006	0.003	0.012			0.006	0.63		
Benzo(b)fluoranthene	0.2	0.02	0.015	0.037	0.3	0.21		1.1		
Benzo(ghi)perylene		0.001		0.002				0.29		
Benzo(k)fluoranthene	0.18	0.007	0.005	0.017			0.003	0.5		
Chrysene	0.26	0.023	0.011	0.046	0.25	0.25		1.3		0.009
Dibenzo(ah)anthracene		0.018						1.5		
Fluoranthene	2.9	0.22	0.17	0.39	2.4	1.6	0.12	8.1		
Fluorene	0.82	0.079	0.089	0.13	0.84	0.54	0.056	2		0.17
Indeno(123-cd)pyrene		0.001		0.002				0.18		
Naphthalene										
Phenanthrene	1.6	0.073	0.071	0.13	0.84	0.57	0.049	2.2		0.077
Pyrene	2	0.12	0.08	0.25	1.8	1.1	0.07	6		0.13
l-Methylnaphthalene	2.4	0.39	0.31	0.55	3.4	2	0.53	6.6	0.023	0.54
2-Methylnaphthalene	1.1	0.16	0.23	0.25	1.4	0.85		2.5	0.006	0.26
Other Noncarcinogenic PN	2.9	0.204	0.341	0 442	1.57	1.05	0.169	3.79	0	0.387
PCBs (mg/L)										
Aroclor-1254					0.001					
Metals (mg/L)										
Lead										

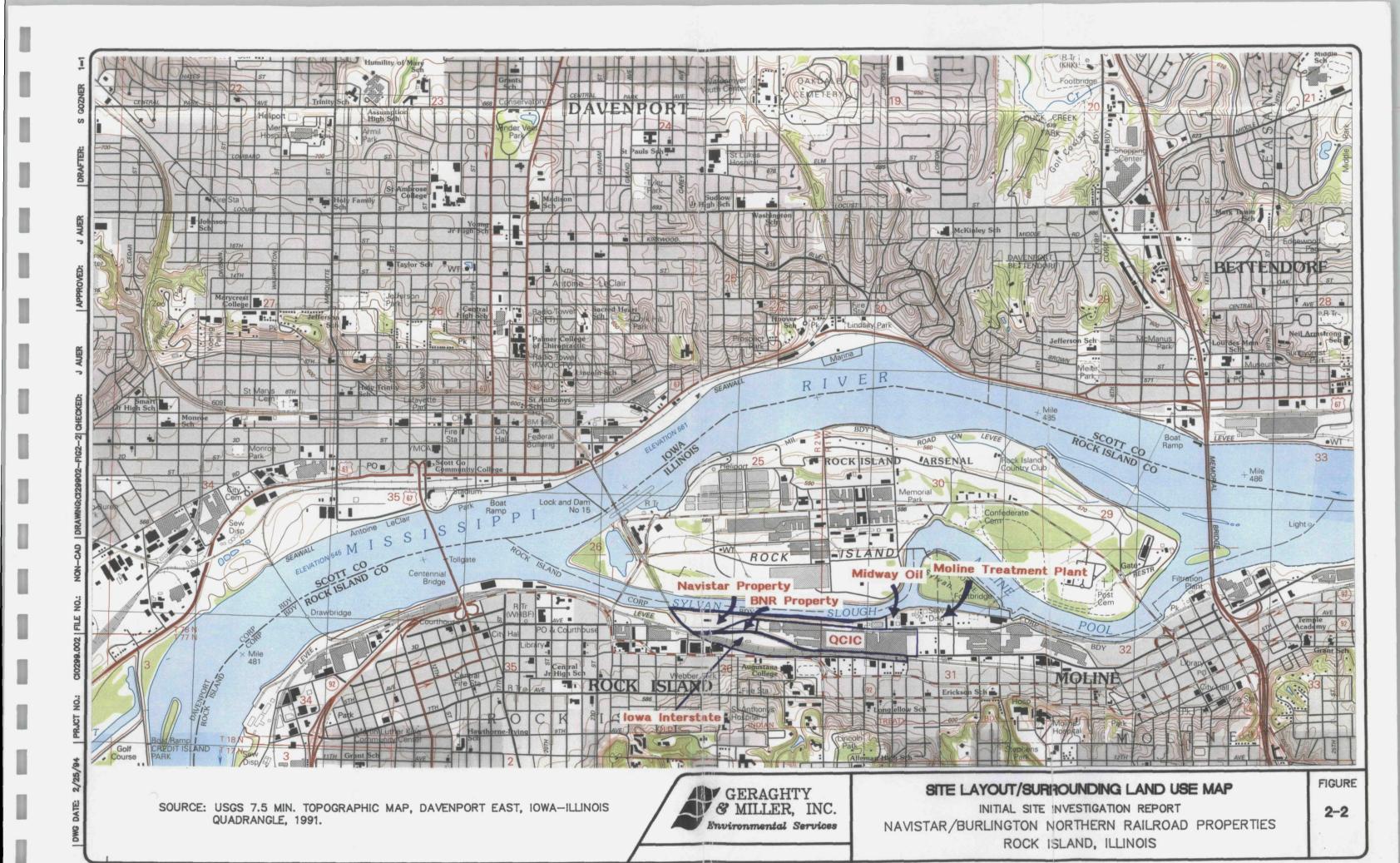
Notes:

- 1. "VOCs" indicate volatile organic compounds.
- 2. "PNAs" indicate polynuclear aromatic hydrocarbons.
- 3. "PCBs" indicate polychlorinated biphenyls.
- 4. GM-0 is a duplicate groundwater sample of GM-5.
- 5. All concentrations are reported in milligrams per liter (mg/L).
- 6. A blank space indicates that the constituent concentration was reported below the laboratory detection limit.
- 7. The Class I groundwater cleanup objectives consist of Illinois Class I groundwater standards and Illinois recommended baseline cleanup objectives for groundwater at non-LUST (Leaking Underground Storage Tank), petroleum-contaminated sites.

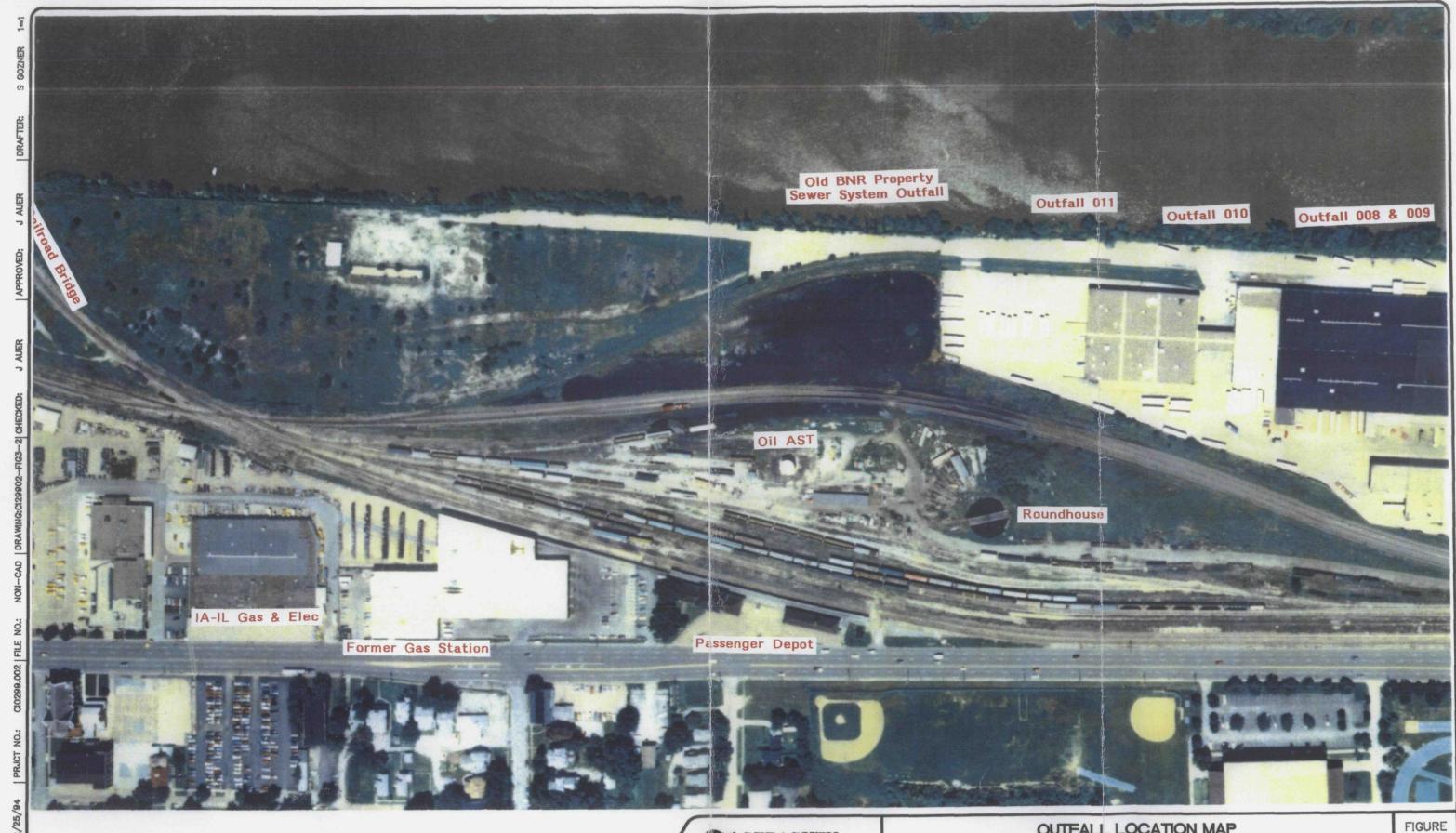
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FIGURES











OUTFALL LOCATION MAP (WESTERN HALF OF FARMALL SITE)

INITIAL SITE INVESTIGATION REPORT NAVISTAR/BURLINGTON NORTHERN RAILROAD PROPERTIES ROCK ISLAND, ILLINOIS

3-2

SOURCE: PILKO & ASSOCIATES, INC., SOILS AND GROUNDWATER INVESTIGATION, FARMALL, ROCK ISLAND, ILLINOIS, JUNE, 1989.

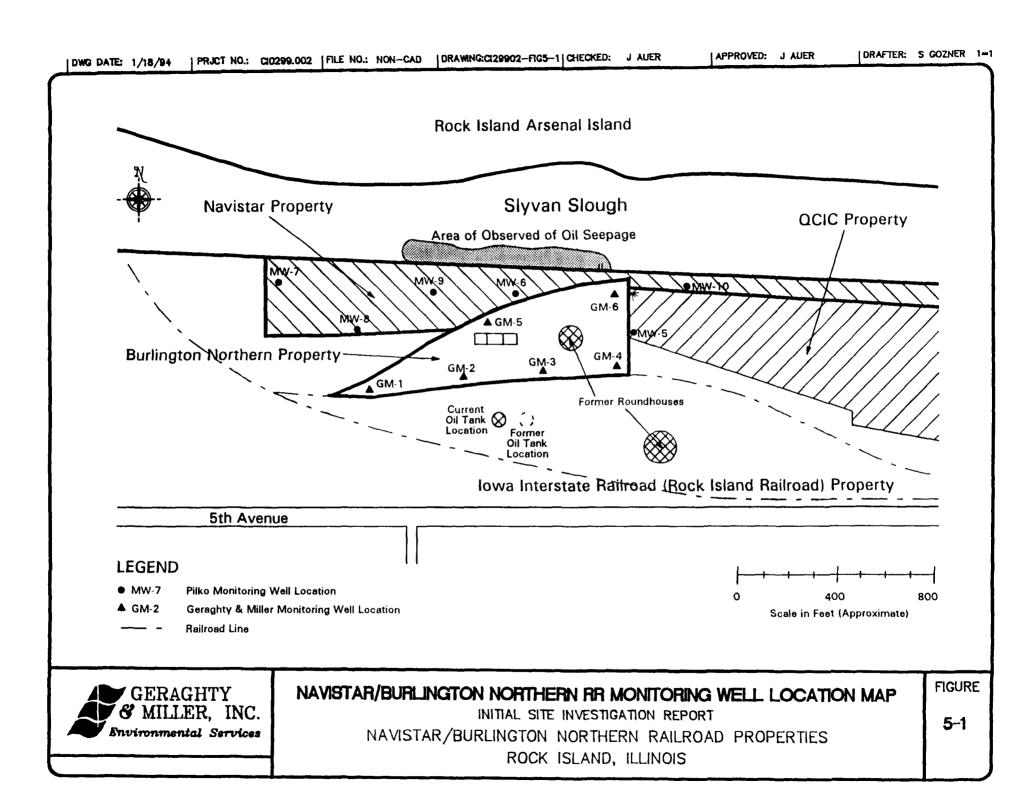


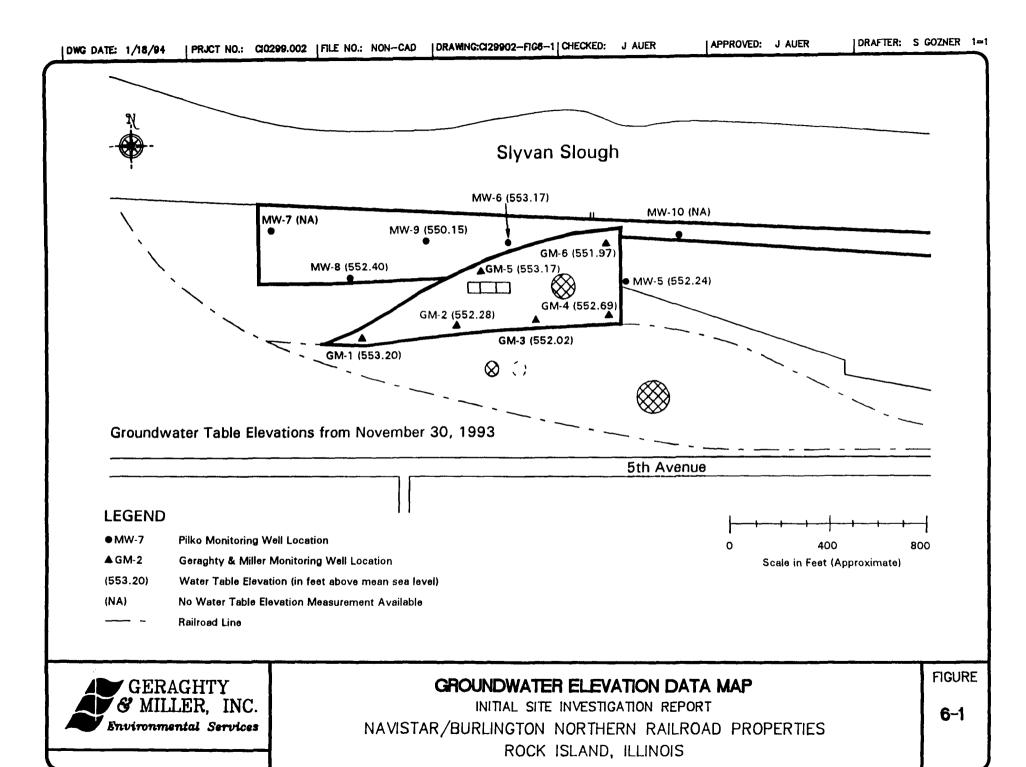
PILKO SOIL BORING/MONITORING WELL LOCATIONS

INITIAL SITE INVESTIGATION REPORT
NAVISTAR/BURLINGTON NORTHERN RAILROAD PROPERTIES
ROCK ISLAND, ILLINOIS

FIGURE

3-3





Appendix A

Soil Boring Logs

Boring/W	ell GM-	-1	_ Project/No.	C10299.002 Page	1 of 2
Site Location	BNR/N	NAVIST		Drilling Drilling Complete 11/16/93	3
Total Depth Dr Length a	illed 19)		Diameter 8.25 inches Coring Device Splitspoon	
of Coring				Sampling Continuous	feet
Land-Sui	face Ele	ev	feet	Surveyed Estimated Datum	
Drilling F	luid Use	d <u>none</u>		Drilling Method	
Drilling Contracto			Drilling	Driller Mike Swanson Helper Dustin Jac	kson
Prepared By Step	phen J.	Hjort		Hammer Hammer Drop 27	inche
	ore Depth and surface) To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description	OVA
0	2	1.8	3,5,8,9	0-0.4 Black silt with coal or ash cinders	0
				0.4-0.5 Dark brown silty sand	
i				0.5-1.5 Dark brown silty sand with cinders	
				1.5-2.0 Medium brown poorly graded sand with	
				trace silt	
2	4	1.7	5,6,8,8	0-0.3 Medium brown poorly graded sand with trace	0
				silt	
İ				0.3-0.4 Light brown very fine sand with some silt	
i				0.4-1.7 Medium brown poorly graded sand with trace	
				silt	
4	6	1.7	5,5,5,6	0-0.5 Medium brown poorly graded sand with trace	100
				silt	
				0.5-1.7 Grayish black poorly graded sand, odor,	
			······································	product coating on sand grains	
6	8	1.7	3,4,3,4	0-0.2 Black poorly graded sand with trace silt,	10,000
				saturated with product (diesel odor)	
				0.2-0.25 Gray silt seam	
				0.25-1.7 Grayish black well graded sand, saturated	
				with product	

2

Boring/Well	<u>GM-1</u>	Page ₋	2	of —
Prepared By Stephe	n J. Hjort			

	Core Depth land surface) To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description	OVA
8	10	1.8	3,3,2,2	0-1.0 Grayish black well graded sand, saturated with	10,000
				product	
				1.0-1.4 Black silty sand, saturated with product	
				1.4-1.45 Grayish black silty sand, saturated with	
				product	
				1.45-1.75 Grayish black poorly graded sand with	
				trace silt	
				1.75-1.8 Grayish brown silty clay, saturated with	
				product	
10	12	1.3	2,1,1,5	0-0.2 Grayish black poorly graded sand with trace	10,000
				silt, saturated with product	
				0.2-0.3 Grayish brown clayey silt, saturated with	
•				product	
				0.3-0.6 Grayish black poorly graded sand with trace	
				silt, saturated with product	
				0.6-1.3 Black alternating layers of silty sand and silt	
				saturated with product	
12	14	1.0	13,5,7,10	0-1.0 Black alternating layers of silty sand and silt,	
	İ			saturated with product, WET (water table) with	
				angular limestone pieces	•••••••••••••••••••••••••••••••••••••••
14	19			Blind drill	
				End of Boring at 19'	

Boring/Well GM-2		Project/No.	C10299.002 Page 1	of _2
Site Location BNR/NA			Drilling Drilling Complete 11/16/93	
Total Depth Drilled 19		_ feet Hole	Diameter 8.25 inches Coring Device Splitspoon	==
Length and Diamet of Coring Device		•	Sampling Continuous	fe et
Land-Surface Elev.		feet	Surveyed Estimated Datum	
Drilling Fluid Used	none		Drilling Method	
Drilling Contractor Rock &	Soil [Prilling	Driller Mike Swanson Helper Dustin Jac	kson
Prepared By Stephen J. H	jort		Hammer Hammer Weight 140 Drop 27	inches
R	Care soovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description	OVA
0 2	1.8	5,6,8,8	0-0.4 Black silt with cinder	0
	•		0.4-1.1 Brown cinders with some silt	
	. }		1.1-1.8 Medium brown poorly graded sand with trace	
			silt	
2 4	1.5	7,5,5,5	0-0.9 Medium brown poorly graded sand with trace	150
			silt	
			0.9-1.2 Grayish black poorly graded sand with silt,	
			saturated with product	
			1.2-1.5 Black poorly graded sand with trace silt,	• • • • • • • • • • • • • • • • • • • •
	•		saturated with product	
4 6	1.6	5,5,5,4	0-0.2 Black poorly graded sand with trace silt,	450
			saturated with product	
			0.2-0.5 Grayish black poorly graded sand with trace	
			silt, saturated with product	
			0.5-1.6 Alternating layers of poorly graded sand and	
			silty sand, saturated with product	
6 8	1.5	5,3,3,4	0-1.2 Grayish black poorly graded sand with 2 cm	700
			silt seams from 1.0-1.2, saturated with product	
			1.2-1.5 Black poorly graded sand with little pebble	
			size gravel, saturated with product	
				·

Prepared By Stephen J. Hjort Sample/Core Depth (feet below land surface) From To (feet) Time/Hydraulic Pressure or Blowe per 6 inches							
				Sample/Core Description			
8	10	1.4	4,6,5,3	0-1.0 Gray well graded coarse sand, saturated with	1700		
				product			
				1.0-1.4 Grayish black poorly graded sand very fine			
				to coarse, saturated with product			
10	12	1.2	2,1,2,2	0-0.3 Grayish black poorly graded sand very fine	9,000		
				to coarse, saturated with product			
				0.3-0.5 Black poorly graded sand, saturated with			
				product			
				0.5-0.6 Black silty clay, saturated with product			
				0.6-1.2 Black silty sand with some gravel, saturated			
	,		!	with product			
12	14	1.0	12,8,18,11	0-0.3 Black silty sand and gravel, saturated with			
				with product, WET			
				0.3-1.0 Black silty sand with limestone chips,			
				saturated with product, WET			
14	19			Blind drill			
				End of Boring at 19'			
					•		
		••••					
				1			

Boring/V	Vell GM	-3	_ Project/No.	C10299.002 Page	1 of 2
Site	BNR/I	NAVIST	_	Drilling Drilling Complete 11/16/9	 3
Total Depth D Length :	rilled 18 and Dian	neter		Diameter 8.25 inches Coring Device Splitspoon	
of Corin	g Device	2 X 2	<u> </u>	Interval Continuous	feet
	rface Ele		feet		<u> </u>
Drilling F	Fluid Use	d none		Drilling Method	
Contract	or Rock		Drilling	Driller Mike Swanson Helper Dustin Ja Hammer Hammer	<u>ckson</u>
By Ste	phen J.	Hjort		Weight 140 Drop 27	inches
	Core Depth land surface) To	Core Recovery (feet)	Time/Hydrautic Pressure or Blows per 6 inches	Sample/Core Description	OVA
0	2	2.0	5,4,5,6	0-0.3 Black silt with cinders	0
				0.3-0.7 Medium brown poorly graded sand with	
:				trace silt	
1				0.7-2.0 Alternating layers of tan silt and medium	
				brown silty sand	
2	4	1.7	5,3,2,1	0-0.8 Alternating layers of tan silt and medium	200
				brown silty sand	
				0.8-1.7 Black and grayish black alternating layers	
				of silt and silty sand, saturated with product	
4	6	1.3	4,3,1,2	0-0.1 Black and grayish black alternating layers of	250
: :				silt and silty sand, saturated with product	
				0.1-1.3 Grayish black poorly graded sand with trace	
				silt, saturated with product	
6	8	1.3	5,2,2,3	0-1.3 Grayish black poorly graded sand with trace	450
				silt, saturated with product	
8	10	1.4	3,2,2,2	0-1.4 Grayish black poorly graded sand with trace	250
				silt, saturated with product	
10	12	1.7	3,1,1,2	0-0.8 Grayish black poorly graded sand with trace	2,000
				silt with more coarse sand, saturated with product	
		,,,,		0.8-1.7 Grayish black poorly graded sand, saturated	
				with product, WET	

Boring/V	Vell G	A-3		Page 2	_ of	2
Prepare By Ste	d phen J.	Hjort				
Sample/C (feet below is From	ore Depth and surface) To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Semple/Core Description		OVA
12	14	1.6	1,1,10,9	0-0.6 Grayish black poorly graded sand, saturated		
				with product, WET		
				0.6-1.6 Black silty sand and gravel, WET, saturated		
				with product		
14	18			Blind drill		
			·····	End of Boring at 18'		
					ļ	
		,				
					ļ	
					<u></u>	
		.,,				
					<u> </u>	

Boring/V	Vell GM-	4	_ Project/No.	C10299.002 Page	of <u>1</u>
Site Location	BNR/N	NAVIST	AR_	Drilling Drilling Complete 11/16/93	,
Total Depth Di Length a	rilled 18	.	·	Diameter 8.25 inches Coring Device Splitspoon	
of Corin				Sampling Continuous	feet
Land-Su	rface Ele	ev	feet	Surveyed Estimated Datum	
Drilling F	luid Use	d <u>none</u>		Drilling Method	
Drilling Contract	or Rock	& Soil	Drilling	Driller Nike Swanson Helper Dustin Jac	kson
Prepared By Ste	phen J.	Hjort		Hammer Hammer Weight 140 Drop 27	inches
Sample/C (feet below From	Core Depth land surface) To	Core Recovery (feet)	Time/Hydraulic Pressure or Blowe per 6 inches	Sample/Core Description	OVA
0	2	2.0	4,5,4,3	0-0.1 Dark brown silt with cinders, glass, etc.	0
				0.1-2.0 Medium brown poorly graded sand with trace	
				silt	
2	4	1.4	5,3,4,6	0-0.7 Medium brown poorly graded sand with trace	0
				silt	
				0.7-1.4 Grayish brown poorly graded sand with trace	
				silt, odor	
4	6	1.6	5,4,3,4	0-1.2 Grayish brown poorly graded sand with trace	50
				silt, odor	
				1.2-1.3 Black silty fine sand, saturated with product	
			•• 	1.3-1.6 Grayish black poorly graded sand with trace	
				silt, saturated with product	
6	8	1.4	3,2,3,5	0-1.4 Grayish black poorly graded sand with trace	100
				silt, saturated with product	
8	10	1.5	6,5,7,7	0-1.1 Grayish black poorly graded sand with trace	350
				silt, saturated with product	
		!		1.1-1.4 Black poorly graded sand with trace silt,	
				saturated with product	
10	12	1.2	5,5,7,10	0-0.2 Black poorly graded sand with trace silt,	3,500
				saturated with product	
				0.2-0.8 Grayish black poorly graded sand, saturated	
		1		with product	

Prepare	d ohen J.			Page			
Sample/C (fest below in From	ore Depth and surface) To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description	OVA		
				0.8-1.2 Grayish black well graded coarse sand with			
				some small pebbles, saturated with product, WET			
12	14	1.6	4,4,4,3	0-0.3 Grayish black well graded coarse sand with			
				some small pebbles, saturated with product, WET			
				0.3-1.5 Grayish black poorly graded sand, saturated	l		
				with product, WET			
				1.5-1.6 Black silty fine sand, saturated with product,			
				WET			
14	18			Blind drill			
				End of Boring at 18'			
					•••••		

Bor	ing/W	eli GM	-5	_ Project/No.	C10299.002 Page	1 of 2
Site	ation	BNR/N	NAVIST	AR	Drilling Drilling Complete 11/17/93	 3
Tot Dep	al oth Dri	illed 17	,		Diameter 8.25 inches Coring Device Splitspoon	
of 0	Coring	Device	2' x 2"	· ·	Sampling Continuous	feet
Lan	ıd-Sur	face Ele	ev	feet	Surveyed Estimated Datum	
	_	luid Use	d None	!	Drilling Method	
Drill Cor	ling itracto	r Rock	& Soil	Drilling	Driller K. Swanson Helper Dustin Jac	kson
Pre Bv	pared S ter	ohen J.	Hjort		Hammer Hammer Weight 140 Drop 27	inches
(fee	Sample/Cr	ore Depth and surface)		Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description	OVA
	0	2	1.0	9, 17/6 "	0-0.4 Black silty sand	0
					0.4-1.0 Black silty sand with cinders and little gravel	
ļ	2	4	1.6	7,9,6,7	0-0.1 Black silty sand with cinders and little gravel	0
					0.1-0.4 Dark brown silty sand	······································
					0.4-0.7 Black silty sand	••••••
					0.7-1.0 Dark brown silty sand	
					1.0-1.5 Black silty fine sand	
					1.5-1.6 Medium brown well graded very fine to	
1 -					fine sand	
	4	6	1.3	4,4,4,4	0-0.1 Medium brown well graded very fine to	70
					fine sand	
					0.1-1.1 Black silty sand, odor	
					1.1-1.3 Medium brown well graded fine sand	
	6	8	1.5	6,3,3,3	0-0.3 Black silty sand, odor	40
					0.3-0.4 Light brown well graded fine sand	•••••••••••
					0.4-1.0 Tan well graded fine sand	
					1.0-1.5 Black poorly graded sand with little pebble	
					size gravel, odor	
	8	10	1.4	3,4,8,8	0-0.8 Black poorly graded sand with 3 tan well	2,600
					graded fine sand seams at 0.5	
					0.8-1.4 Black silty sand and gravel, saturated with	
					product, moist to WET	

Boring/Well GM-5			Page 2	of <u>2</u>	
d phen J.	Hjort				
Sample/Core Depth Time/Hydraulic (feet below land surface) Core Recovery From To (feet) Blows per 6 inches		Pressure or Blows per	Sample/Core Description	OVA	
12	1.5	4,6,7,8	0-0.3 Black silty sand and gravel, saturated with	4,500	
			product, WET		
			0.3-1.1 Black poorly graded sand and gravel,		
			saturated with product, WET		
			1.1-1.5 Grayish black poorly graded sand, saturated		
			with product, WET		
17			Blind drill		
		•••••	End of Boring at 17'		
		· ······ · · ······· · · ·			
		······································			
		······································			
		······································			
	phen J. fore Depth and surface) To 12	phen J. Hjort Core Depth and surface) To Core Recovery (feet) 12 1.5	phen J. Hjort Tore Depth and surface) To Core Pecovery (feet) To Sinches 12 1.5 4,6,7,8	price J. Hjort Core Depth Core Personner Premise sulface	

Boring/W	/ell GM-	-6	_ Project/No.	C10299.002 Page	1 of 2
Site Location	BNR/N	IAVIST	ΓAR	Drilling Drilling Complete 11/17/9:	 3
Total Depth Dr Length a	illed _17	,		Diameter 8.25 inches Coring Device Splitspoon	
of Coring				Sampling Interval Continuous	feet
Land-Su	rface Ele	ev.	feet		
Drilling F	luid Use	d none		Drilling Method	
Drilling Contract			Drilling	Driller K. Swanson Helper Dustin Jac	ckson
Prepared By Ste	phen J.	Hjort		Hammer Hammer Weight 140 Drop 27	inches
Sample/C	core Depth and surface)		Time/Hydraulic Pressure or Blows per 6 inches	Sample/Core Description	OVA
0	2	1.6	22,12,15,16	0-0.6 Black silty sand with cinders	600
				0.6-1.2 Dark brown silty sand and gravel, with	
·····				cinders	
				1.2-1.6 Black silty sand with some gravel	
2	4	1.5	8,6,3,3	0-0.2 Black silty sand with some gravel	200
				0.2-1.5 Black silty sand, with tan well graded fine	
				sand inclusions from 0.7-1.2, odor	
4	6	1.6	3,2,1,3	0-1.6 Black silty sand, odor	300
6	8	1.5	5,4,3,7	0-0.7 Black silty sand, odor	300
				0.7-1.5 Black poorly graded sand and gravel with	
				trace silt, saturated with product	
8	10	1.3	7,4,2,2	0-0.8 Black poorly graded sand and gravel with trace	350
				silt, saturated with product	
				0.8-0.9 Grayish green silty clay, saturated with	
				product	
				0.9-1.3 Dark gray poorly graded sand, saturated	
				with product	
10	12	1.3	2,2,2,2	0-0.1 Dark gray poorly graded sand, saturated	350
				with product	
				0.1-1.1 Black poorly graded sand and gravel,	
				saturated with product, WET	
				<u> </u>	

Prepare	Vell GA ed phen J.			Page 2	
Sample/Core Depth Time/Hydraulic (feet below land surface) Core Recovery From To (feet) 6 inches		Pressure or Blows per	Sample/Core Description		
10	12	1.3	2,2,2,2	1.1-1.3 Black silt with trace clay, saturated with	
				product, WET	
12	14	1.2	4,2,2,6	0-0.2 Alternating layers of black poorly graded sand	
				and grayish black silty clay, saturated with product,	
				WET	
				0.2-0.5 Black silty sand, saturated with product,	
				WET	
				0.5-0.7 Black bituminous (coal)	
				0.7-1.2 Black poorly graded sand and gravel,	
				saturated with product, WET	
14	17			Blind drill	
				End of Boring at 17'	
			······································		
					• • • • • • • • • • • • • • • • • • • •

Appendix B Soil Analytical Results



SIGNATURE PAGE

Reviewed by:

ATI Project Manager

Client:

GERAGHTY & MILLER

CHICAGO, ILLINOIS

Project Name:

N/S

Project Number:

CI0299.002

Project Location: BNR/NAVISTAR

Accession Number: 311572

Project Manager: JIM AVER

Sampled By:

STEPHEN J. HJORT

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Analysis Report

Analysis: Group of Single Metals

Accession: Client:

Project Number:

Project Name: Project Location: Department:

311572 GERAGHTY & MILLER CI0299.002

N/S BNR/NAVISTAR METALS

[0) Page 1 Date 24-Nov-93

"Multiple Sample Report Format"

Accession:

311572

Oct.	eve	۱.		
ULL	EVH	1 =		

Accession: Client: Project Number: Project Name: Project Location: Test: QcLevel:	311572 GERAGHTY & MILLER CI0299.002 N/S BNR/NAVISTAR Group of Single Meta	als			
Lab Parameter: Id		Unit:	Result:	R.L	Q:
GM-1 2-4' 002 LEAD, TCLP (6	010)	MG/L	ND	0.5	
GM-1 8-10' 004 LEAD, TCLP (6	010)	MG/L	ND	0.5	
GM-2 10-12' 006 LEAD, TCLP (6	010)	MG/L	ND	0.5	
GM-3 10-12' 008 LEAD, TCLP (6	010)	MG/L	ND	0.5	
GM-4 10-12' 010 LEAD, TCLP (6	010)	MG/L	ND	0.5	
GM-5 2-4' 012 LEAD, TCLP (6	010)	MG/L	1.1	0.5	
GM-5 8-10' 014 LEAD, TCLP (6	010)	MG/L	3.5	0.5	
GM-6 10-12' 016 LEAD, TCLP (6	010)	MG/L	ND	0.5	

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

[0] Page 2 Date 24-Nov-93

"Multiple Sample Report Format"

Accession:

311572

Client:

GERAGHTY & MILLER CI0299.002

Project Number: CI0299.002
Project Name: N/S
Project Location: BNR/NAVISTAR
Test: Group of Sing

Group of Single Metals

Client Id:	Lab Matrix: Id:	Date/Time Sampled:	Date Received:
GM-1 2-4'	002 NON-AQUEOUS LEACHATE	16-NOV-93 1130	18-NOV-93
GM-1 8-10'	004 NON-AQUEOUS LEACHATE	16-NOV-93 1130	18-NOV-93
GM-2 10-12'	006 NON-AQUEOUS LEACHATE	16-NOV-93 1245	18-NOV-93
GM-3 10-12'	008 NON-AQUEOUS LEACHATE	16-NOV-93 1445	18-NOV-93
GM-4 10-12'	010 NON-AQUEOUS LEACHATE	16-NOV-93 1545	18-NOV-93
GM-5 2-4'	012 NON-AQUEOUS LEACHATE	17-NOV-93 0815	18-NOV-93
GM-5 8-10'	014 NON-AQUEOUS LEACHATE	17-NOV-93 0815	18-NOV-93
GM-6 10-12'	016 NON-AOUEOUS LEACHATE	17-NOV-93 0940	18-NOV-93

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

[0] Page 3 Date 24-Nov-93

"Method Report Summary"

Accession Number: 311572

Client:

GERAGHTY & MILLER C10299.002

Project Number: CI0299.002
Project Name: N/S
Project Location: BNR/NAVISTAR

Group of Single Metals

Client Sample Id:	Parameter:	Unit:	Result:
GM-5 2-4'	LEAD, TCLP (6010)	MG/L	1.1
GM-5 8-10'	LEAD, TCLP (6010)	MG/L	3.5

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Analysis Report

Analysis: POLYNUCLEAR AROMATICS BY 8310 (ILLINOIS TYPE A)

Accession:

Client:

Project Number: Project Name: Project Location:

Department:

311572

GERAGHTY & MILLER

CI0299.002

N/S

BNR/NAVISTAR

SEMI-VOLATILE FUELS

(0) Page 1 Date 08-Dec-93

311572 Accession:

Client:

GERAGHTY & MILLER CI0299.002 Project Number:

Project Name: N/S
Project Location: BNR/NAVISTAR

Test: POLYNUCLEAR AROMATICS BY 8310 (ILLINOIS TYPE A)
Analysis Method: 8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992
Extraction Method: 3550/SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Matrix: SOIL

QC Level: I

Lab Id:	001	Sample Date/Time:	
Client Sample Id:	GM-1 2-4'	Received Date:	18-NOV-93

Batch: PAS306 Extraction Date: 22-NOV-93 Dry Weight %: 92 Analysis Date: 27-NOV-93 Blank: A

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/KG	7 7	11	
ACENAPHTHYLENE	UG/KG	ND	11	
ANTHRACENE	UG/KG	ND	11	
BENZO(a) ANTHRACENE	UG/KG	ND	2.8	
BENZO(a)PYRENE	UG/KG	ND	5	
BENZO(b) FLUORANTHENE	UG/KG	ND	3.9	
BENZO(g,h,i)PERYLENE	UG/KG	ND	11	
BENZO(k) FLUORANTHENE	UG/KG	ND	3.7	
CHRYSENE	UG/KG	ND	11	
DIBENZO(a,h)ANTHRACENE	UG/KG	ND	7	
FLUORANTHENE	UG/KG	15	11	
FLUORENE	UG/KG	16	11	
INDENO(1,2,3-cd)PYRENE	UG/KG	ND	9.3	
NAPHTHALENE	UG/KG	11	11	
PHENANTHRENE	UG/KG	11	11	
PYRENE	UG/KG	ND	11	
2-CHLOROANTHRACENE	%REC/SURR	73	24-154	
	INITIALS	DGH	44 434	
ANALYST	INTITALS	UGA		

(0) Page 2 Date 08-Dec-93

Accession: 311572

GERAGHTY & MILLER Client:

Project Number: Project Name: Project Location: CI0299.002

N/S

BNR/NAVISTAR

Test: POLYNUCLEAR AROMATICS BY 8310 (ILLINOIS TYPE A)
Analysis Method: 8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992
Extraction Method: 3550/SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Matrix: SOIL QC Level:

003 Sample Date/Time: 16-NOV-93 1130 Lab Id:

Client Sample Id: GM-1 8-10' Received Date: 18-NOV-93

Extraction Date: Batch: PAS306

22-NOV-93 Blank: A 01-DEC-93 Dry Weight %: 85 Analysis Date:

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE ACENAPHTHYLENE ANTHRACENE BENZO(a) ANTHRACENE BENZO(b) FLUORANTHENE BENZO(b) FLUORANTHENE BENZO(k) FLUORANTHENE CHRYSENE DIBENZO(a,h) ANTHRACENE FLUORANTHENE FLUORENE INDENO(1,2,3-cd) PYRENE NAPHTHALENE PHENANTHRENE PYRENE 2-CHLOROANTHRACENE ANALYST	UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG	4100 2900 ND 6500 3900 ND 52000 31000	1200 1200 1200 310 540 420 1200 710 1200 1200 1200 1200 1200 120	

[0] Page 3 Date 08-Dec-93

Accession: 311572

GERAGHTY & MILLER Client:

CI0299.002 Project Number:

Project Name: N/S
Project Location: BNR/NAVISTAR

Test: POLYNUCLEAR AROMATICS BY 8310 (ILLINOIS TYPE A)
Analysis Method: 8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992
Extraction Method: 3550/SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Matrix: SOIL

QC Level:

		 		_
Lab Id: Client Sample Id:	005 GM-2 10-12'	Sample Date/Time: Received Date:	16-NOV-93 1245 18-NOV-93	

Batch: PAS306

Extraction Date: 22-NOV-93 Analysis Date: 01-DEC-93 Dry Weight %: 79 Blank: A

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/KG	ND	1300	
ACENAPHTHYLENE	UG [′] /KG	ND	1300	
ANTHRACENE	UG'/KG	16000	1300	
BENZO (a) ANTHRACENE	UG/KG	18000	330	
BENZO(a) PYRENE	UG/KG	8500	580	
BENZO (b) FLUORANTHENE	UG ['] /KG	8000	460	
BENZO(q,h,i)PERYLENE	UG/KG	ND	1300	
BENZO (K) FLUÓRANTHENE	UG/KG	15000	430	
CHRYSÈNÉ	UG/KG	13000	1300	
DIBENZO(a,h)ANTHRACENE	UG/KG	ND	760	
FLUORANTHENÉ	UG/KG	ND	1300	
FLUORENE	UG/KG	77000	1300	
INDENO(1,2,3-cd)PYRENE	UG/KG	ND	1100	
NAPHTHÀLENE	UG/KG	12000	1300	
PHENANTHRENE	UG/KG	86000	1300	
PYRENE	UG/KG	150000	1300	
2-CHLOROANTHRACENE	%REC/SURR	D*	24-154	
ANALYST	INITIALS	DGH		

{0) Page 4
Date 08-Dec-93

Accession:

311572

Client:

GERAGHTY & MILLER

Project Number: Project Name:

CI0299.002

N/S

Project Location: BNR/NAVISTAR

Test: POLYNUCLEAR AROMATICS BY 8310 (ILLINOIS TYPE A)
Analysis Method: 8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992
Extraction Method: 3550/SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Matrix:

SOIL

QC Level:

I

Lab Id:

007 Client Sample Id: GM-3 10-12'

Sample Date/Time: Received Date:

16-NOV-93 1445 18-NOV-93

88

Extraction Date: Analysis Date:

22-NOV-93

Batch: PAS306

Blank: A

Dry Weight %:

01-DEC-93

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/KG	ND	1100	
ACENAPHTHYLENE	UG/KG	21000	1100	
ANTHRACENE	UG/KG	10000	1100	
BENZO (a) ANTHRACENE	UG/KG	8100	300	
BENZO(a) PYRENE	UG/KG	3000	520	
BENZO(b) FLUORANTHENE	UG/KG	7200	410	
BENZO(g,h,i)PERYLENE	UG/KG	ND	1100	
BENZO(k) FLUORANTHENE	UG/KG	ND	390	
CHRYSÈNE	UG/KG	6300	1100	
DIBENZO(a,h)ANTHRACENE	UG/KG	ND	680	
FLUORANTHENE	UG/KG	120000	1100	
FLUORENE	UG/KG	28000	1100	
INDENO(1,2,3-cd)PYRENE	UG/KG	ND	980	
NAPHTHALENE	UG/KG	ND	1100	
PHENANTHRENE	UG/KG	8300	1100	
PYRENE	UG/KG	64000	1100	
2-CHLOROANTHRACENE	%REC/SURR	D*	24-154	
ANALYST	INITIALS	DGH		

[0] Page 5 Date 08-Dec-93

311572 Accession:

GERAGHTY & MILLER Client:

Project Number: CI0299.002

N/S Project Name:

Project Location: BNR/NAVISTAR

Test: POLYNUCLEAR AROMATICS BY 8310 (ILLINOIS TYPE A)
Analysis Method: 8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992
Extraction Method: 3550/SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Matrix: SOIL

QC Level: I

Lab Id:	009	Sample Date/Time:	16-NOV-93 1545
Client Sample Id:	GM-4 10-12'	Received Date:	18-NOV-93

Batch: PAS306

Extraction Date: 22-NOV-93 Dry Weight %: 88 01-DEC-93 Blank: A Analysis Date:

_	Parameter:	Units:	Results:	Rpt Lmts:	Q:
	ACENAPHTHENE ACENAPHTHYLENE	UG/KG UG/KG	ND 17000	1100 1100	
	ANTHRACENE	UG/KG	5000	1100	
-	BENZO(a)ANTHRACENE BENZO(a)PYRENE	UG/KG UG/KG	7800 3 7 00	300 520	
	BENZO (b) FLUORANTHENE	UG/KG	5200	410	
	BENZO(g, h, i) PERYLENE BENZO(k) FLUORANTHENE	UG/KG UG/KG	ND 2800	1100 390	
	CHRYSÈNÉ	UG/KG	3900 5200	1100 680	
	DIBENZO(a,h)ANTHRACENE FLUORANTHENE	UG/KG UG/KG	98000	1100	
	FLUORENE	UG/KG UG/KG	19000 ND	1100 980	
-	INDENO(1,2,3-cd)PYRENE NAPHTHALENE	UG/KG	ND	1100	
	PHENANTHRENE PYRENE	UG/KG UG/KG	24000 58000	1100 1100	
_	2-CHLOROANTHRACENE	%RÉC/SURR	D*	24-154	
_	ANALYST	INITIALS	DGH		

[0) Page 6 Date 08-Dec-93

Accession:

311572

Client:

GERAGHTY & MILLER

Project Number:

CI0299.002

Project Name: Project Location:

N/S

BNR/NAVISTAR

Test: POLYNUCLEAR AROMATICS BY 8310 (ILLINOIS TYPE A)
Analysis Method: 8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992
Extraction Method: 3550/SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Matrix:

SOIL

QC Level:

I

La	b	I	d	:

011 Client Sample Id: GM-5 2-4' Sample Date/Time: Received Date:

17-NOV-93 0815 18-NOV-93

Batch: PAS306 Blank: A

Dry Weight %:

Extraction Date: Analysis Date:

22-NOV-93 02-DEC-93

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE ACENAPHTHYLENE ANTHRACENE BENZO(a)ANTHRACENE BENZO(a)PYRENE BENZO(b)FLUORANTHENE BENZO(g,h,i)PERYLENE BENZO(k)FLUORANTHENE CHRYSENE DIBENZO(a,h)ANTHRACENE FLUORANTHENE FLUORANTHENE FLUORENE INDENO(1,2,3-cd)PYRENE NAPHTHALENE PHENANTHRENE PYRENE 2-CHLOROANTHRACENE ANALYST	UG/KG UG/KG	3000 950 170 490 ND 670 600 260 170 1800 1900 460 410 51 390 1700 365* DGH	11 11 2.8 4.9 3.9 11 3.7 11 6 11 11 9.2 11 11 24-154	

^{*}SURROGATE FAILURE DUE TO MATRIX INTERFERENCE.

(0) Page 7 Date 08-Dec-93

Accession: 311572

GERAGHTY & MILLER Client:

Project Number: CI0299.002
Project Name: N/S
Project Location: BNR/NAVISTAR

Test: POLYNUCLEAR AROMATICS BY 8310 (ILLINOIS TYPE A)
Analysis Method: 8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992
Extraction Method: 3550/SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Matrix: SOIL

OC Level:

2-CHLOROANTHRACENE

Oc reser:	1						
Lab Id: Client Sample Id:	013 : GM-5 8-10'		Sample Da Received			10V-93 10V-93	0815
Batch: PAS306 Blank: A	Dry Weight %:	85	Extractio Analysis			10V-93 DEC-93	
Parameter:		Units:	Results:	Rpt Ln	ats:	Q:	
ACENAPHTHENE ACENAPHTHYLENE		UG/KG UG/KG	и р 63000	1200 1200			
ANTHRACENE BENZO(a)ANTHRACEI BENZO(a)PYRENE	NE	UG/KG UG/KG UG/KG	11000 13000 3300	1200 310 540			
BENZO(b) FLUORANTI BENZO(g,h,i) PERYI	LENE	UG/KG UG/KG UG/KG	5700 ND 2000	420 1200 400			
BENZO(k) FLUORANTI CHRYSENE DIBENZO(a,h)ANTHI		UG/KG UG/KG	9100 ND	1200 710			
FLUORANTHENE FLUORENE INDENO(1,2,3-cd)	PYRENE	UG/KG UG/KG UG/KG	200000 48000 ND	1200 1200 1000			
		,					

UG/KG

UG/KG

UG'/KG %REC/SURR

INITIALS

ND

D*

DGH

59000

110000

1200

1200

1200

24-154

Comments:

NAPHTHALENE

PYRENE

ANALYST

PHENANTHRENE

[0] Page 8 Date 08-Dec-93

311572 Accession:

GERAGHTY & MILLER Client:

Project Number: CI0299.002

Project Name: N/S

Project Location: BNR/NAVISTAR

Test: POLYNUCLEAR AROMATICS BY 8310 (ILLINOIS TYPE A)
Analysis Method: 8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992
Extraction Method: 3550/SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Matrix: SOIL

QC Level: I

Lab Id:	015	Sample Date/Time:	
Client Sample Id:	GM-6 10-12'	Received Date:	18-NOV-93

Extraction Date: 22-NOV-93 O1-DEC-93 Batch: PAS306 Dry Weight %: 83 Blank: A

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/KG	ND	1200	
ACENAPHTHYLENE	UG/KG	48000	1200	
ANTHRACENE	UG/KG	18000	1200	
BENZO (a) ANTHRACENE	UG ['] /KG	15000	310	
BENZO(a) PYRENE	UG/KG	8200	550	
BENZO(b) FLUORANTHENE	UG/KG	14000	430	
BENZO(g,h,i)PERYLENE	UG/KG	ND	1200	
BBNZO(k) FLUORANTHENE	UG ['] /KG		410	
CHRYSENE	UG/KG	9600	1200	
DIBENZO(a,h)ANTHRACENE	UG [′] /KG	מא	720	
FLUORANTHENE	UG/KG	110000	1200	
FLUORENE	UG/KG	54000	1200	
INDENO(1,2,3-cd)PYRENE	UG/KG		1000	
NAPHTHALENE	UG/KG		1200	
PHENANTHRENE	UG/KG	16000	1200	
PYRENE	UG [′] /KG	120000	1200	
2-CHLOROANTHRACENE	%REC/SURR		24-154	
ANALYST	INITIALS	DGH		

[0] Page 9 Date 08-Dec-93

"Method Report Summary"

Accession Number: 311572

Client: GERAGHTY & MILLER
Project Number: CI0299.002
Project Name: N/S
Project Location: BNR/NAVISTAR

POLYNUCLEAR AROMATICS BY 8310 (ILLINOIS TYPE A) Test:

	Client Sample Id:	Parameter:	Unit:	Result:
	GM-1 2-4'	ACENAPHTHENE	UG/KG	77
	ON 1 2 4	FLUORANTHENE	UG/KG	15
		FLUORENE	UG/KG	16
				11
		NAPHTHALENE	UG/KG	
		PHENANTHRENE	UG/KG	11
•	GM-1 8-10'	ACENAPHTHYLENE	UG/KG	24000
		ANTHRACENE	UG/KG	7100
		BENZO(a)ANTHRACENE	UG/KG	8500
		BENZO(a) PYRENE	UG/KG	4100
		BENZO(b) FLUORANTHENE	UG/KG	2900
		BENZO(k) FLUORANTHENE	UG'/KG	6500
		CHRYSENE	UG/KG	3900
		FLUORANTHENE	UG/KG	52000
		FLUORENE	UG/KG	31000
		NAPHTHALENE	UG/KG	1600
		PHENANTHRENE	UG/KG	10000
				59000
		PYRENE	UG/KG	16000
	GM-2 10-12'	ANTHRACENE	UG/KG	
J		BENZO (a) ANTHRACENE	UG/KG	18000
		BENZO(a) PYRENE	UG/KG	8500
		BENZO(b) FLUORANTHENE	UG/KG	8000
		BENZO (k) FLUORANTHENE	UG/KG	15000
		CHRYSÈNÈ	UG/KG	13000
ŀ		FLUORENE	UG/KG	77000
		PLUCKENE NAPHTHALENE	UG/KG	12000
		PHENANTHRENE	UG/KG	86000
		PYRENE	UG/KG	150000
	GM-3 10-12'	ACENAPHTHYLENE	UG/KG	21000
,	GM-3 10-12	ANTHRACENE	UG/KG	10000
		BENZO(a) ANTHRACENE	UG/KG	8100
			UG/KG	3000
		BENZO(a) PYRENE		
4		BENZO(b) FLUORANTHENE	UG/KG	7200
		CHRYSENE	UG/KG	6300
		FLUORANTHENE	UG/KG	120000
		FLUORENE	UG/KG	28000
		PHENANTHRENE	UG/KG	8300
		PYRENE	UG/KG	64000
	GM-4 10-12'	ACENAPHTHYLENE	UG/KG	17000
		ANTHRACENE	UG/KG	5000
		BENZO(a) ANTHRACENE	UG'/KG	7800
		BENZO(a) PYRENE	UG/KG	3700
		BENZO(b) FLUORANTHENE	UG/KG	5200
		BENZO(k) FLUORANTHENE	UG/KG	2800
				3900
		CHRYSENE	UG/KG	3300

[0) Page 10 Date 08-Dec-93

"Method Report Summary"

Accession Number: 311572

GERAGHTY & MILLER CI0299.002 Client:

Project Number:

Project Name: N/S
Project Location: BNR/NAVISTAR

POLYNUCLEAR AROMATICS BY 8310 (ILLINOIS TYPE A)

Client Sample Id:	Parameter:	Unit:	Result:
	DIBENZO(a,h)ANTHRACENE	UG/KG	5200
	FLUORANTHENE	UG/KG	98000
	DIBENZO(a,n)ANTHRACENE FLUORANTHENE FLUORENE PHENANTHRENE PYRENE ACENAPHTHENE	UG/KG	19000
	PHENANTHRENE	UG/KG	24000
	PYRENE	UG/KG	58000
GM-5 2-4'	ACENAPHTHENE	UG/KG	3000
	ACENAPHTHYLENE	UG/KG	950
	ANTHRACENE	UG/KG UG/KG	170
	BENZO (a) ANTHRACENE	UG/KG	490
	BENZO(b) FLUORANTHENE	UG/KG	670
	BENZO(g,h,i)PERYLENE	UG/KG UG/KG	600
	BENZO (Ř) FLUÖRANTHENE	UG/KG	260
	CHRYSENE	UG/KG	170
	DIBENZO(a,h)ANTHRACENE	UG/KG	1800
	FLUORANTHENE	UG/KG	1900
	FLUORENE	UG/KG	460
	INDENO(1,2,3-cd)PYRENE	UG/KG UG/KG	410
	NAPHTHALENE	UG/KG	51
	PHENANTHRENE	UG/KG UG/KG	390
	PYRENE	UG/KG	1700
GM-5 8-10'	ACENAPHTHYLENE	UG/KG	63000
	ANTHRACENE	UG/KG UG/KG	11000
	BENZO (a) ANTHRACENE	UG/KG	13000
	BENZO (a) PYRENE	UG/KG	3300
	BENZO (b) FLUORANTHENE	UG/KG UG/KG	5700
	BENZO (k) FLUORANTHENE	UG/KG	2000
	CHRYSENE	UG/KG	9100
	FLUORANTHENE	UG/KG UG/KG	200000
	FLUORENE	UG/KG	48000
	PHENANTHRENE	UG/KG	59000
	PYRENE	UG/KG	110000
GM-6 10-12'	ACENAPHTHYLENE	UG/KG	48000
	ANTHRACENE	UG/KG UG/KG	18000
	BENZO (a) ANTHRACENE		15000
	BENZO(a) PYRENE	UG/KG	8200
	BENZO(b) FLUORANTHENE	UG/KG	14000
	BENZO(k) FLUORANTHENE	UG/KG	5000
	CHRYSENE	UG/KG	9600
	FLUORANTHENE	UG/KG	110000
	FLUORENE	UG/KG	54000
	PHENANTHRENE	UG/KG	16000
	PYRENE	UG/KG	120000

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Analysis Report

Analysis: PCB

Accession: 311572
Client: GERAGHTY & MILLER
Project Number: CI0299.002
Project Name: N/S
Project Location: BNR/NAVISTAR
Department: PESTICIDES

[0) Page 1
Date 02-Dec-93

Accession:

311572

Client:

GERAGHTY & MILLER

Project Number: Project Name:

CI0299.002

Project Location: BNR/NAVISTAR

N/S

Test:

PCB

Analysis Method: 8080, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Extraction Method: 3550 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.

Matrix:

SOIL Ι

QC Level:

001

Sample Date/Time: Received Date:

16-NOV-93 1130 18-NOV-93

Q:

Lab Id: Client Sample Id: GM-1 2-4'

Batch: PCS295

Extraction Date: Analysis Date:

23-NOV-93 30-NOV-93

Blank: B

Dry Weight %:

92

Parameter:	Units:	Results:	Rpt Lmts:
AROCLOR-1016 AROCLOR-1221 AROCLOR-1232 AROCLOR-1242 AROCLOR-1248 AROCLOR-1254 AROCLOR-1260 DCB TCMX	UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG UG/KG KREC/SURR REC/SURR	ND ND ND ND ND ND ND ND 102 65	36 36 36 36 36 36 36 22-147 14-134
ANALYST	INITIALS	SM	

(0) Page 2 Date 02-Dec-93

Accession:

311572

Client:

GERAGHTY & MILLER

Project Number:

CI0299.002

Project Name: Project Location:

N/S

BNR/NAVISTAR

Test:

PCB

Analysis Method: 8080, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Extraction Method: 3550 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.

Matrix:

SOIL

QC Level:

Ι

Lab Id:

003

Sample Date/Time:

16-NOV-93 1130

Client Sample Id:

GM-1 8-10'

Received Date:

18-NOV-93

Batch: PCS295

Blank: B

Dry Weight %:

Extraction Date: Analysis Date:

23-NOV-93 30-NOV-93

Parameter:

Units:

AROCLOR-1016

UG/KG

Results: ND

Rpt Lmts: Q:

AROCLOR-1221 AROCLOR-1232 AROCLOR-1242 AROCLOR-1248 AROCLOR-1254

UG/KG UG/KG UG/KG UG/KG UG/KG

UG/KG

ND ND ND ND ND

39

AROCLOR-1260 DCB

%REC/SURR %REC/SURR INITIALS

ND 143 68 SM

39 22-147 14-134

Comments:

TCMX

ANALYST

(0) Page 3 Date 02-Dec-93

Accession:

311572

Client:

GERAGHTY & MILLER

Project Number:

CI0299.002

Project Name:

Project Location:

N/S

Test:

BNR/NAVISTAR PCB

Analysis Method: 8080, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Extraction Method: 3550 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.

Matrix:

SOIL

QC Level:

Ι

Lab Id: Client Sample Id:

005 GM-2 10-12' Sample Date/Time: Received Date:

16-NOV-93 1245 18-NOV-93

Q:

Batch: PCS295

79

Units:

Extraction Date: Analysis Date:

23-NOV-93 30-NOV-93

Blank: B

Dry Weight %:

Rpt Lmts:

Parameter:

AROCLOR-1016 AROCLOR-1221 AROCLOR-1232

AROCLOR-1242 AROCLOR-1248

AROCLOR-1260 DCB

AROCLOR-1254

TCMX ANALYST

42 42 42 UG/KG ND UG/KG ND UG/KG ND 42 42

Results:

UG/KG ND UG/KG ND UG/KG ND UG/KG ND

%REC/SURR %REC/SURR 143 80 INITIALS SM

42 42 22-147 14-134

[0) Page 4 Date 02-Dec-93

14-134

311572 Accession:

Client: GERAGHTY & MILLER

CI0299.002 Project Number:

Project Name: N/S
Project Location: BNR/NAVISTAR

Test: PCB

Analysis Method: 8080, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Extraction Method: 3550 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.

SOIL Matrix: QC Level: Ι

Sample Date/Time: 16-NOV-93 1445 007 Lab Id: Client Sample Id: GM-3 10-12' Received Date: 18-NOV-93

Batch: PCS295

Extraction Date: 23-NOV-93 Analysis Date: Blank: B 30-NOV-93 Dry Weight %:

Parameter: Rpt Lmts: Units: Results: Q: 38 UG/KG AROCLOR-1016 ND AROCLOR-1221 UG/KG ND 38 AROCLOR-1232 UG/KG 38 ND AROCLOR-1242 UG/KG ND 38 UG/KG UG/KG ND 38 AROCLOR-1248 38 AROCLOR-1254 ND AROCLOR-1260 UG/KG ND 38 %REC/SURR %REC/SURR 137 77 22-147

INITIALS

SM

Comments:

DCB TCMX

ANALYST

(0) Page 5 Date 02-Dec-93

Accession:

311572

Client:

GERAGHTY & MILLER

Project Number:

CI0299.002

Project Name:

N/S

Project Location:

BNR/NAVISTAR

Test:

PCB

Analysis Method:

8080, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Extraction Method: 3550 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.

SOIL

Matrix: QC Level:

Lab Id: Client Sample Id:

009 GM-4 10-12'

Sample Date/Time: Received Date:

16-NOV-93 1545 18-NOV-93

Q:

Batch: PCS295 Blank: B

Extraction Date: Analysis Date:

23-NOV-93 30-NOV-93

Dry Weight %:

88

Results: Rpt Lmts: ND 38

Parameter:

AROCLOR-1016 AROCLOR-1221 AROCLOR-1232 AROCLOR-1242 AROCLOR-1248 AROCLOR-1254 AROCLOR-1260

UG/KG UG/KG UG/KG UG/KG UG/KG

Units:

UG/KG

UG/KG

ND ND ND ND ND

ND

DCB TCMX ANALYST

%REC/SURR %REC/SURR INITIALS

147 58 SM

22-147 14-134

[0) Page 6 Date 02-Dec-93

Accession:

311572

Client:

GERAGHTY & MILLER

Project Number:

CI0299.002

Project Name: Project Location: N/S BNR/NAVISTAR

Test:

PCB

Analysis Method: 8080, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Extraction Method: 3550 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.

SOIL

Matrix: QC Level:

Ι

Lab Id: Client Sample Id: 011 GM-5 2-4' Sample Date/Time: Received Date:

17-NOV-93 0815 18-NOV-93

Q:

Extraction Date:

23-NOV-93

Batch: PCS295

Blank: B

Dry Weight %:

93

Analysis Date:

30-NOV-93

Parameter:

Units:

Results: Rpt Lmts: ND 35

AROCLOR-1016 AROCLOR-1221

AROCLOR-1232 AROCLOR-1242 AROCLOR-1248

AROCLOR-1254 AROCLOR-1260

DCB TCMX ANALYST UG/KG UG/KG UG/KG UG/KG

UG/KG

UG/KG UG/KG

%REC/SURR %REC/SURR

INITIALS

ND ND 450 ND ND

58

23

SM

ND

35 22-147 14-134

[0] Page 7 Date 02-Dec-93

Accession: 311572

GERAGHTY & MILLER CI0299.002 Client:

Project Number:

N/S

Project Name: Project Location: BNR/NAVISTAR

Test: PCB

Analysis Method: 8080, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Extraction Method: 3550 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.

SOIL Matrix:

QC Level: Ι

Lab Id:	013	Sample Date/Time: Received Date:	17-NOV-93 0815
Client Sample Id:	GM-5 8-10'		18-NOV-93

Batch: PCS295

Extraction Date: 23-NOV-93 Dry Weight %: 85 Blank: B Analysis Date: 30-NOV-93

Parameter:	Units:	Results:	Rpt Lmts:	Q:
AROCLOR-1016	UG/KG	ND	39	
AROCLOR-1221	UG/KG	ND	39	
AROCLOR-1232	UG/KG	ND	39	
AROCLOR-1242	UG/KG	ND	39	
AROCLOR-1248	UG/KG	ND	39	
AROCLOR-1254	UG ['] /KG	ND	39	
AROCLOR-1260	UG/KG	ND	39	
DCB	%REC/SURR	86	22-147	
TCMX	%REC/SURR	55	14-134	
ANALYST	TNITTALS	SM	= - = -	

(0) Page 8 Date 02-Dec-93

Accession:

311572

Client:

GERAGHTY & MILLER

Project Number:

CI0299.002

Project Name:

N/S

Project Location: BNR/NAVISTAR

Test:

PCB

Matrix:

Analysis Method: 8080, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Extraction Method: 3550 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.

SOIL

QC Level:

Lab Id:

Ι

Client Sample Id: GM-6 10-12'

015

Sample Date/Time: Received Date:

17-NOV-93 0940 18-NOV-93

Q:

Batch: PCS295 Blank: B

83

Extraction Date: Analysis Date:

23-NOV-93

Dry Weight %:

%REC/SURR

%REC/SURR

INITIALS

Results: Rpt Lmts:

30-NOV-93

Parameter: AROCLOR-1016 AROCLOR-1221

AROCLOR-1232 AROCLOR-1242 AROCLOR-1248 AROCLOR-1254

DCB

AROCLOR-1260 TCMX

ANALYST

Units: UG/KG ND UG/KG ND UG/KG UG/KG ND

ND UG/KG ND UG/KG UG/KG

ND ND 95 60 SM 40 40 40

40

40 40 40 22-147 14-134

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

(0) Page 9 Date 02-Dec-93

"Method Report Summary"

Accession Number: 311572

GERAGHTY & MILLER

Client: Project Number: CI0299.002

Project Name: N/S
Project Location: BNR/NAVISTAR

PCB

Client Sample Id:

Parameter:

Unit:

Result:

GM-5 2-4'

AROCLOR-1248

UG/KG

450

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Analysis Report

Analysis: VOLATILES (8240)

Accession: Client: Project Number: CI0299.002
Project Name: N/S
Project Location: BNR/NAVISTAR
Department: ORGANIC/MS

311572 GERAGHTY & MILLER

[0) Page 1 Date 29-Nov-93

Accession: 311572

Client: GERAGHTY & MILLER Project Number: CI0299.002 Project Name: N/S Project Location: BNR/NAVISTAR

VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Tesť: Analysis Method:

Extraction Method: N/A Matrix: SOIL QC Level: Ι

Lab Id: 001 Sample Date/Time: 16-NOV-93 1130

Client Sample Id: GM-1 2-4' Received Date: 18-NOV-93

Batch: NAS108 Extraction Date: N/A

Blank: B Dry Weight %: 93 23-NOV-93 Analysis Date:

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACETONE	UG/KG	39	11	
ACROLEIN	UG/KG	ND	110	
ACRYLONITRILE	UG/KG	ND	110	
BENZENE	UG/KG	ND	ī	
BROMODICHLOROMETHANE	UG/KG	ND	ī	
BROMOFORM	UG/KG	ND	2	
BROMOMETHANE	UG/KG	ND	ī	
2-BUTANONE (MEK)	UG/KG	ND	3	
CARBON DISULFIDE	UG/KG	ND	ĭ	
CARBON TETRACHLORIDE	UG/KG	ND	2	
CHLOROBENZENE	UG/KG	ND	ī	
CHLOROETHANE	UG/KG	ND	ī	
2-CHLOROETHYLVINYL ETHER	UG/KG	ND	5	
CHLOROFORM	UG/KG	ND	2	
CHLOROMETHANE	UG/KG	ND	2	
CHLORODIBROMOMETHANE	UG/KG	ND	5	
DIBROMOMETHANE	UG/KG	ND	5	
DICHLORODIFLUOROMETHANE	UG/KG	ND	1 2 1 3 1 2 1 1 5 2 2 5 5 5	
1,1-DICHLOROETHANE	UG'/KG	ND	ī	
1,2-DICHLOROETHANE	UG/KG	ND	1 2	
1,1-DICHLOROETHENE	UG/KG	ND	1	
TOTAL 1,2-DICHLOROETHYLENE	UG/KG	ND	1 5 2 1	
1,2-DICHLOROPROPANE	UG/KG	ND	2	
CIS-1,3-DICHLOROPROPENE	UG/KG	ND		
TRANS-1,3-DICHLOROPROPENE	UG/KG	ND	1	
1,4-DICHLORO-2-BUTENE	UG/KG	ND	5	
ETHYL BENZENE	UG/KG	ND	1	
ETHYL METHACRYLATE	UG/KG	ND	5	
2-HEXANONE	UG/KG	ND	3	
IODOMETHANE	UG/KG	ND	5	
METHYLENE CHLORIDE	UG/KG	7	3	
4-METHYL-2-PENTANONE	UG/KG	ND	3	
STYRENE	UG/KG	ND	2	
1,1,2,2-TETRACHLOROETHANE	UG/KG	ND	2	
TETRACHLOROETHENE	UG/KG	ND	1	
TOLUENE	UG/KG	ND	1 5 1 5 3 5 3 2 2 2 1 5 5	
1,1,1-TRICHLOROETHANE	UG/KG	ND	5	
1,1,2-TRICHLOROETHANE	UG/KG	ND	2	
TRICHLOROETHENE	UG/KG	ND	1	
TRICHLOROFLUOROMETHANE	UG/KG	ND	1	

[0] Page 2 Date 29-Nov-93

Accession:

311572

GERAGHTY & MILLER

Client:
Project Number: CI0299.002
Project Name: N/S
Project Location: BNR/NAVISTAR
VOLATILES (8240)
COMMON SW 846, 3rd Analysis Method:

Extraction Method: N/A

8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992.

104

DWB

81-117

Matrix:

SOIL

QC Level:

Ι

Lab Id: 001 Client Sample Id: GM-1 2-4'		Sample Da Received	,	
Parameter:	Units:	Results:	Rpt Lmts: Q:	
1,2,3 TRICHLOROPROPANE	UG/KG	ND	5	
VINYL ACETATE	UG/KG	ND	2	
VINYL CHLORIDE	UG/KG	ND	1	
TOTAL XYLENES	UG/KG	ND	2	
BROMOFLUOROBENZENE	%REC/SURR	100	74-121	
1,2-DICHLOROETHANE-D4	%REC/SURR	101	70-121	
		101	01 117	

%REC/SURR

INITÍALS

Comments:

TOLUENE-D8

ANALYST

(0) Page 3 Date 29-Nov-93 311572 Accession: Client: GERAGHTY & MILLER Project Number: CI0299.002 Project Name: N/S BNR/NAVISTAR Project Location: Test: VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Analysis Method: Extraction Method: N/A Matrix: SOIL QC Level: I Lab Id: 003 Sample Date/Time: 16-NOV-93 1130 Client Sample Id: GM-1 8-10' Received Date: 18-NOV-93 Batch: NAS108 Extraction Date: N/A Blank: C Dry Weight %: 86 Analysis Date: 24-NOV-93 Parameter: Units: Results: Rpt Lmts: Q: 58 ACETONE UG/KG 84 ACROLEIN UG/KG ND 580 UG/KG ACRYLONITRILE ND 580 BENZENE UG/KG ND 6 **BROMODICHLOROMETHANE** UG/KG ND 6 10 BROMOFORM UG/KG ND UG/KG **BROMOMETHANE** ND 2-BUTANONE (MEK) CARBON DISULFIDE UG/KG 20 ND UG/KG ND CARBON TETRACHLORIDE UG/KG ND 10 CHLOROBENZENE UG/KG ND 6 UG/KG UG/KG CHLOROETHANE ND 6 30 2-CHLOROETHYLVINYL ETHER ND CHLOROFORM UG/KG ND 10 ND 10 CHLOROMETHANE UG/KG CHLORODIBROMOMETHANE UG/KG ND 30 UG/KG ND 30 DIBROMOMETHANE DICHLORODIFLUOROMETHANE UG/KG ND 30 1,1-DICHLOROETHANE UG/KG ND 6 10 1,2-DICHLOROETHANE UG/KG ND 1,1-DICHLOROETHENE UG/KG ND 6 TOTAL 1,2-DICHLOROETHYLENE 30 UG/KG ND 1,2-DICHLOROPROPANE UG/KG ND 10 CIS-1,3-DICHLOROPROPENE UG/KG ND ND TRANS-1, 3-DICHLOROPROPENE UG/KG 6 1,4-DICHLORO-2-BUTENE UG/KG ND 30 UG/KG ETHYL BENZENE 13 6 30 ETHYL METHACRYLATE UG/KG ND 2-HEXANONE UG/KG ND 20 UG/KG ND 30 IODOMETHANE METHYLENE CHLORIDE UG/KG 28 20 ND 4-METHYL-2-PENTANONE UG/KG 20 STYRENE UG/KG ND 10 1,1,2,2-TETRACHLOROETHANE UG/KG ND 10 TETRACHLOROETHENE UG/KG ND 6 UG/KG UG/KG ND 30 TOLUENE 1,1,1-TRICHLOROETHANE ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 10

UG/KG

UG/KG

TRICHLOROETHENE

TRICHLOROFLUOROMETHANE

ND

ND

6

6

[0] Page 4 Date 29-Nov-93

311572 Accession:

Client: Project Number: GERAGHTY & MILLER

CI0299.002 N/S

Project Name:

BNR/NAVISTAR

Project Location: Test:

Analysis Method:

VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992.

Extraction Method: N/A Matrix: QC Level:

SOIL I

Lab Id:	:		003	
Client	Sample	Id:	GM-1	8-10'

Sample	Date/Time:	16-NOV-93	1130
Receive	ed Date:	18-NOV-93	

0110110 Dainp10 101 101 10 10				
Parameter:	Units:	Results:	Rpt Lmts: Q:	
1,2,3 TRICHLOROPROPANE VINYL ACETATE VINYL CHLORIDE	UG/KG UG/KG UG/KG	ND ND ND	30 10 6	
TOTAL XYLENES BROMOFLUOROBENZENE 1,2-DICHLOROETHANE-D4 TOLUENE-D8	UG/KG %REC/SURR %REC/SURR %REC/SURR	88 M* 89 92	10 74-121 70-121 81-117	
ANALYST	INITIALS	DWB	01-117	

^{*} MATRIX INTERFERENCE.

(0) Page 5 Date 29-Nov-93 Accession: 311572 Client: GERAGHTY & MILLER Project Number: CI0299.002 Project Name: N/S Project Location: BNR/NAVISTAR Test: VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Analysis Method: Extraction Method: N/A Matrix: SOIL QC Level: I Sample Date/Time: 16-NOV-93 1245 Lab Id: 005 Received Date: 18-Nov-93 Client Sample Id: GM-2 10-12' Batch: NAS108 Extraction Date: N/A 23-NOV-93 Blank: B Dry Weight %: 79 Analysis Date: Results: Rpt Lmts: Units: Parameter: Q: ACETONE UG/KG 260 63 ACROLEIN UG/KG ND 630 ACRYLONITRILE 630 UG/KG ND BENZENE UG/KG ND 6 BROMODICHLOROMETHANE UG/KG ND 6 UG/KG ND 10 **BROMOFORM** UG/KG ND 20 UG/KG 40 UG/KG ND 6 10 ND UG/KG UG/KG ND 6 UG/KG ND 30 UG/KG ND ND 10

BROMOMETHANE 2-BUTANONE (MEK) CARBON DISULFIDE CARBON TETRACHLORIDE CHLOROBENZENE CHLOROETHANE 2-CHLOROETHYLVINYL ETHER UG/KG UG/KG CHLOROFORM CHLOROMETHANE 10 ND **CHLORODIBROMOMETHANE** UG/KG ND 30 DIBROMOMETHANE UG/KG ND 30 ND 30 DICHLORODIFLUOROMETHANE UG/KG 1,1-DICHLOROETHANE ND UG/KG 1,2-DICHLOROETHANE UG/KG 10 ND 1,1-DICHLOROETHENE UG/KG ND 30 TOTAL 1,2-DICHLOROETHYLENE UG/KG ND 1,2-DICHLOROPROPANE UG/KG ND 10 UG/KG UG/KG CIS-1,3-DICHLOROPROPENE ND 6 ND TRANS-1, 3-DICHLOROPROPENE 6 30 1.4-DICHLORO-2-BUTENE UG/KG ND UG/KG 11 6 ETHYL BENZENE ETHYL METHACRYLATE UG/KG ND 30 2-HEXANONE 20 UG/KG ND IODOMETHANE ND 30 UG/KG METHYLENE CHLORIDE UG/KG ND 20 4-METHYL-2-PENTANONE UG/KG ND 20 STYRENE UG/KG ND 10 1,1,2,2~TETRACHLOROETHANE UG/KG ND 10 TETRACHLOROETHENE UG/KG ND ND 30 TOLUENE UG/KG UG/KG ND 30 1,1,1-TRICHLOROETHANE 1,1,2-TRICHLOROETHANE UG/KG ND 10 UG/KG ND 6 TRICHLOROETHENE TRICHLOROFLUOROMETHANE UG/KG 9

[0] Page 6 Date 29-Nov-93

311572 Accession:

GERAGHTY & MILLER Client:

Project Number: CI0299.002 Project Name: N/S Project Location: BNR/NAVISTAR

VOLATILES (8240) Test: 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992.

Analysis Method: Extraction Method: N/A SOIL

Matrix: QC Level: Ι

Lab Id: 005 Client Sample Id: GM-2 10-12'		Sample Date/Time: Received Date:		16-NOV-93 1245 18-NOV-93	
Parameter:	Units:	Results:	Rpt Ln	nts:	Q:
1,2,3 TRICHLOROPROPANE VINYL ACETATE VINYL CHLORIDE TOTAL XYLENES BROMOFLUOROBENZENE 1,2-DICHLOROETHANE-D4	UG/KG UG/KG UG/KG UG/KG SREC/SURR REC/SURR	ND ND ND 56 M* 95	30 10 6 10 74-121 70-121	-	
				21	21

INITIALS

DWB

Comments:

ANALYST

^{*} MATRIX INTERFERENCE.

[0] Page 7 Date 29-Nov-93

16-NOV-93 1445

18-NOV-93

Accession: 311572

GERAGHTY & MILLER Client:

CI0299.002 Project Number:

Project Name: N/S
Project Location: BNR/NAVISTAR

007

Test:

VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Analysis Method:

Extraction Method: N/A Matrix: QC Level: SÓIL Ι

Lab Id:

Sample Date/Time: Client Sample Id: GM-3 10-12' Received Date:

Batch: NAS108 Extraction Date: N/A

Blank: C Dry Weight %: 89 Analysis Date: 24-NOV-93

ACETONE ACROLEIN ACROLEIN UG/KG ACROLEIN UG/KG ACROLEIN ACRYLONITRILE UG/KG BENZENE UG/KG BENZENE UG/KG BENZENE UG/KG BROMODICHLOROMETHANE UG/KG BROMODICHLOROMETHANE UG/KG BROMOFORM UG/KG ND 6 BROMOFORM UG/KG ND 10 BROMOMETHANE UG/KG ND 6 CABON DISULFIDE UG/KG ND 6 CARBON DISULFIDE UG/KG ND 10 CARBON DISULFIDE UG/KG ND 10 CHLOROBETHANE UG/KG ND 10 CHLOROBETHANE UG/KG ND 10 CHLOROFORM UG/KG ND 10 CHLORODEINE UG/KG ND 10 CHLORODEINE UG/KG ND 10 CHLORODEINE UG/KG ND 10 CHLOROMETHANE UG/KG ND 10 CHLOROMETHANE UG/KG ND 10 DICHLORODIBROMOMETHANE UG/KG ND 11,1-DICHLOROETHANE UG/KG ND 12-DICHLOROETHANE UG/KG ND 11,1-DICHLOROETHANE UG/KG ND 10 CIS-1,3-DICHLOROPROPENE UG/KG ND 10 CIS-1,3-DICHLOROPROPENE UG/KG ND 10 CIS-1,3-DICHLOROPROPENE UG/KG ND 10 CIS-1,3-DICHLOROETHANE UG/KG ND 10 CIS-1,3-DICHUROETHANE UG/KG ND 10 CIS-1,3-DICHUROETHANE UG/KG ND 10 CIS-1,3-DICHUROETHANE UG/KG ND 10 C	•	Parameter:	Units:	Results:	Rpt Lmts: Q:
ACROLEIN ACRYLONITRILE UG/KG ACRYLONITRILE UG/KG BENZENE UG/KG BENZENE UG/KG BENZENE UG/KG BROMODICHLOROMETHANE UG/KG BROMODICHLOROMETHANE UG/KG BROMOFORM UG/KG BROMOFORM UG/KG BROMORETHANE UG/KG BROMORE		ACETONE	IIG/KG	77	56
ACRYLONITRILE					
BENZENE					
BROMODICHLOROMETHANE	_				
BROMOFORM					
BROMOMETHANE					
2-BUTANONE (MEK)					
CARBON DISULFIDE UG/KG ND 6 CARBON TETRACHLORIDE UG/KG ND 10 CHLOROBENZENE UG/KG ND 6 CHLOROETHANE UG/KG ND 6 CHLOROFOTHANE UG/KG ND 6 CHLOROFORM UG/KG ND 10 CHLOROFORM UG/KG ND 10 CHLOROMETHANE UG/KG ND 10 CHLOROMETHANE UG/KG ND 30 DIBROMOMETHANE UG/KG ND 30 DISROMOMETHANE UG/KG ND 30 I,1-DICHLORODIFLUOROMETHANE UG/KG ND 30 I,1-DICHLOROFOTHANE UG/KG ND 30 I,1-DICHLOROFOTHANE UG/KG ND 6 I,2-DICHLOROFTHANE UG/KG ND 6 I,2-DICHLOROFOTHANE UG/KG ND 10 I,1-DICHLOROFOTHANE UG/KG ND 6 I,1-DICHLOROFOTHENE UG/KG ND 6 I,1-DICHLOROFOTHENE UG/KG ND 6 I,1-DICHLOROFOTHENE UG/KG ND 30 I,2-DICHLOROFOPANE UG/KG ND 30 I,2-DICHLOROFOPANE UG/KG ND 6 TRANS-1,3-DICHLOROFROPENE UG/KG ND 6 TRANS-1,3-DICHLOROFROPENE UG/KG ND 30 I,4-DICHLORO-2-BUTENE UG/KG ND 30 ETHYL BENZENE UG/KG ND 30 ETHYL BENZENE UG/KG ND 30 Z-HEXANONE UG/KG ND 30 Z-HEXANONE UG/KG ND 30 Z-HEXANONE UG/KG ND 30 TODOMETHANE UG/KG ND 30 TODOMETHANE UG/KG ND 30 TODOMETHANE UG/KG ND 30 TODOMETHANE UG/KG ND 30 TETRACKLOROFTHENE UG/KG ND 30 TETRACKLOROFTHENE UG/KG ND 30 TETRACKLOROFTHENE UG/KG ND 30 TETRACKLOROFTHENE UG/KG ND 10 TETRACKLOROFTHENE UG/KG ND 10 TETRACKLOROFTHENE UG/KG ND 10 TETRACKLOROFTHENE UG/KG ND 10 TETRACKLOROFTHENE UG/KG ND 30 I,1,2-TETRACLLOROFTHANE UG/KG ND 30 I,1,2-TETRACLLOROFTHANE UG/KG ND 30 I,1,2-TETRACLOROFTHANE UG/KG ND 30 I,1,2-TETRACLOROFTHANE UG/KG ND 30 I,1,2-TETRACLOROFTHANE UG/KG ND 30 I,1,2-TETRACLOROFTHANE UG/KG ND 30 I,1,2-TETRACHLOROFTHANE UG/KG ND 30 I,1,2-TETRACHOROFTHANE UG/KG ND 30 I,1,2-TETRACHOROFTHANE UG/KG ND 30 I,1,2-TETRACHOROFTHA					
CARBON TETRACHLORIDE UG/KG ND 6 CHLOROBENZENE UG/KG ND 6 CHLOROETHANE UG/KG ND 6 2-CHLOROETHYLVINYL ETHER UG/KG ND 30 CHLOROFORM UG/KG ND 10 CHLOROFORM UG/KG ND 10 CHLOROMETHANE UG/KG ND 30 DIBROMOMETHANE UG/KG ND 30 DIBROMOMETHANE UG/KG ND 30 DIBROMOMETHANE UG/KG ND 30 DICHLORODIFLUOROMETHANE UG/KG ND 30 I,1-DICHLOROETHANE UG/KG ND 6 I,2-DICHLOROETHANE UG/KG ND 6 I,2-DICHLOROETHANE UG/KG ND 6 TOTAL 1,2-DICHLOROETHYLENE UG/KG ND 30 I,2-DICHLOROFORPNE UG/KG ND 10 CIS-1,3-DICHLOROFROPENE UG/KG ND 6 TRANS-1,3-DICHLOROFROPENE UG/KG ND 6 TRANS-1,3-DICHLOROFROPENE UG/KG ND 30 L,4-DICHLOROPROPENE UG/KG ND 6 TRANS-1,3-DICHLOROFROPENE UG/KG ND 30 ETHYL BENZENE UG/KG ND 30 L-4-EXANONE UG/KG ND 30 ETHYL METHACRYLATE UG/KG ND 30 L-HEXANONE UG/KG ND 30 C-HEXANONE UG/KG ND 30 C-HEXANO	•	CARBON DISULFIDE			
CHLOROETHANE 2-CHLOROETHYLVINYL ETHER UG/KG CHLOROFORM UG/KG CHLOROFORM UG/KG ND 10 CHLOROFORM UG/KG ND 10 CHLOROMETHANE UG/KG ND DIBROMOMETHANE UG/KG ND DIROMOMETHANE UG/KG ND DICHLOROETHANE UG/KG ND OICHLOROETHANE UG/KG ND OICHLOROETHYLENE UG/KG ND OICHLOROETHYLENE UG/KG ND OICHLOROFROPANE UG/KG ND OICHLOROFROPANE UG/KG ND OICHLOROFROPENE UG/KG ND OICHLOROETHANE UG/KG ND OICHLOROETHANE UG/KG OICHL		CARBON TETRACHLORIDE			
CHLOROETHANE 2-CHLOROETHYLVINYL ETHER UG/KG CHLOROFORM UG/KG CHLOROFORM UG/KG ND 10 CHLOROFORM UG/KG ND 10 CHLOROMETHANE UG/KG ND DIBROMOMETHANE UG/KG ND DIROMOMETHANE UG/KG ND DICHLOROETHANE UG/KG ND OICHLOROETHANE UG/KG ND OICHLOROETHYLENE UG/KG ND OICHLOROETHONE UG/KG ND OICHLOROFROPANE UG/KG ND OICHLOROFROPANE UG/KG ND OICHLOROFROPENE UG/KG ND OICHLOROETHANE UG/KG ND OICHLOROETHANE UG/KG ND OICHLOROETHANE UG/KG ETHYL BENZENE UG/KG ND OICHLOROETHANE UG/KG ND OICHLOROETH		CHLOROBENZENE			
2-CHLOROETHYLVINYL ETHER					
CHLOROFORM CHLOROMETHANE UG/KG ND CHLORODIBROMOMETHANE UG/KG ND DIBROMOMETHANE UG/KG ND DICHLORODIFLUOROMETHANE UG/KG ND DICHLORODIFLUOROMETHANE UG/KG ND 1,1-DICHLOROETHANE UG/KG ND 1,2-DICHLOROETHANE UG/KG ND 1,2-DICHLOROETHENE UG/KG ND 1,2-DICHLOROETHYLENE UG/KG ND 1,2-DICHLOROFOPANE UG/KG ND 1,2-DICHLOROPROPENE UG/KG ND 10 CIS-1,3-DICHLOROPROPENE UG/KG ND 6 TRANS-1,3-DICHLOROPROPENE UG/KG ND 6 TRANS-1,3-DICHLOROPROPENE UG/KG ND 6 TRANS-1,3-DICHLOROPROPENE UG/KG ND 6 TRANS-1,3-DICHLOROPROPENE UG/KG ND 30 ETHYL BENZENE UG/KG ND 30 ETHYL BENZENE UG/KG ND 30 2-HEXANONE UG/KG ND 30 UG/KG ND 30 NETHYLENE CHLORIDE UG/KG ND 30 METHYLENE CHLORIDE UG/KG ND 30 TETRACHLOROETHANE UG/KG ND 10 1,1,2-TRICHLOROETHANE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 30					
CHLOROMETHANE CHLORODIBROMOMETHANE UG/KG ND DIBROMOMETHANE UG/KG ND DIBROMOMETHANE UG/KG ND DICHLORODIFLUOROMETHANE UG/KG ND DICHLORODIFLUOROMETHANE UG/KG ND 1,1-DICHLOROETHANE UG/KG ND 10 1,1-DICHLOROETHANE UG/KG ND 10 1,1-DICHLOROETHANE UG/KG ND 10 1,1-DICHLOROETHENE UG/KG ND 10 CIS-1,3-DICHLOROETHYLENE UG/KG ND 10 CIS-1,3-DICHLOROPROPENE UG/KG ND 10 CIS-1,3-DICHLOROPROPENE UG/KG ND 6 TRANS-1,3-DICHLOROPROPENE UG/KG ND 1,4-DICHLORO-BUTENE UG/KG ND 1,4-DICHLORO-BUTENE UG/KG ND 10 ETHYL BENZENE UG/KG ND 30 ETHYL BENZENE UG/KG ND 30 ETHYL METHACRYLATE UG/KG ND 30 ETHYL METHACRYLATE UG/KG ND 30 IODOMETHANE UG/KG ND 30 METHYLENE CHLORIDE UG/KG ND 30 TETRACHLOROETHANE UG/KG ND 10 TETRACHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 10 TRICHLOROETHE	_				
CHLORODIBROMOMETHANE UG/KG ND 30 DIBROMOMETHANE UG/KG ND 30 DICHLORODIFLUOROMETHANE UG/KG ND 30 1,1-DICHLOROETHANE UG/KG ND 30 1,2-DICHLOROETHANE UG/KG ND 10 1,1-DICHLOROETHANE UG/KG ND 6 1,2-DICHLOROETHENE UG/KG ND 6 TOTAL 1,2-DICHLOROETHYLENE UG/KG ND 30 1,2-DICHLOROPROPANE UG/KG ND 10 CIS-1,3-DICHLOROPROPENE UG/KG ND 6 TRANS-1,3-DICHLOROPROPENE UG/KG ND 6 TRANS-1,3-DICHLOROPROPENE UG/KG ND 6 1,4-DICHLORO-2-BUTENE UG/KG ND 30 ETHYL BENZENE UG/KG ND 30 ETHYL METHACRYLATE UG/KG ND 30 2-HEXANONE UG/KG ND 30 2-HEXANONE UG/KG ND 30 METHYLENE CHLORIDE UG/KG ND 30 METHYLENE CHLORIDE UG/KG ND 30 METHYLENE CHLORIDE UG/KG ND 20 STYRENE UG/KG ND 20 STYRENE UG/KG ND 20 STYRENE UG/KG ND 10 1,1,2,2-TETRACHLOROETHANE UG/KG ND 10 TETRACHLOROETHENE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 10			UG/KG		
DICHLORODIFLUOROMETHANE		CHLORODIBROMOMETHANE			
DICHLORODIFLUOROMETHANE		DIBROMOMETHANE			
1,1-DICHLOROETHANE UG/KG ND 6 1,2-DICHLOROETHANE UG/KG ND 10 1,1-DICHLOROETHENE UG/KG ND 6 TOTAL 1,2-DICHLOROETHYLENE UG/KG ND 30 1,2-DICHLOROPROPANE UG/KG ND 10 CIS-1,3-DICHLOROPROPENE UG/KG ND 6 TRANS-1,3-DICHLOROPROPENE UG/KG ND 6 1,4-DICHLOROPROPENE UG/KG ND 30 ETHYL BENZENE UG/KG ND 30 ETHYL BENZENE UG/KG ND 30 ETHYL METHACRYLATE UG/KG ND 30 2-HEXANONE UG/KG ND 30 1.0DOMETHANE UG/KG ND 30 METHYLENE CHLORIDE UG/KG ND 30 METHYLENE CHLORIDE UG/KG ND 30 STYRENE UG/KG ND 20 STYRENE UG/KG ND 20 STYRENE UG/KG ND 20 TIOLUENE UG/KG ND 10 TETRACHLOROETHANE UG/KG ND 10 TETRACHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 30 TRICHLOROETHENE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 30 TRICHLOROETHENE UG/KG ND 10	•				
1,2-DICHLOROETHANE 1,1-DICHLOROETHENE UG/KG ND 1,1-DICHLOROETHENE UG/KG ND 30 1,2-DICHLOROPROPANE UG/KG ND 10 CIS-1,3-DICHLOROPROPANE UG/KG ND CIS-1,3-DICHLOROPROPENE UG/KG ND 6 TRANS-1,3-DICHLOROPROPENE UG/KG ND 6 TRANS-1,3-DICHLOROPROPENE UG/KG ND 30 ETHYL BENZENE UG/KG ND ETHYL BENZENE UG/KG ND 30 ETHYL METHACRYLATE UG/KG ND 10DOMETHANE UG/KG ND 10DOMETHANE UG/KG ND 10DOMETHANE UG/KG ND 10DOMETHYLENE CHLORIDE UG/KG ND 17,1,2-TETRACHLOROETHANE UG/KG ND 10 1,1,2,2-TETRACHLOROETHANE UG/KG ND 10 TETRACHLOROETHENE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 10 TRICHLOR			UG/KG		
1,1-DICHLOROETHENE UG/KG ND 6 TOTAL 1,2-DICHLOROETHYLENE UG/KG ND 30 1,2-DICHLOROPROPANE UG/KG ND 10 CIS-1,3-DICHLOROPROPENE UG/KG ND 6 TRANS-1,3-DICHLOROPROPENE UG/KG ND 6 TRANS-1,3-DICHLOROPROPENE UG/KG ND 30 ETHYL BENZENE UG/KG ND 30 ETHYL BENZENE UG/KG ND 30 2-HEXANONE UG/KG ND 30 10DOMETHANE UG/KG ND 30 METHYLENE CHLORIDE UG/KG ND 30 METHYLENE CHLORIDE UG/KG ND 30 STYRENE UG/KG ND 20 STYRENE UG/KG ND 20 STYRENE UG/KG ND 10 1,1,2,2-TETRACHLOROETHANE UG/KG ND 10 TETRACHLOROETHENE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 10					
TOTAL 1,2-DICHLOROETHYLENE					
1,2-DICHLOROPROPANE UG/KG ND 10 CIS-1,3-DICHLOROPROPENE UG/KG ND 6 TRANS-1,3-DICHLOROPROPENE UG/KG ND 6 1,4-DICHLORO-2-BUTENE UG/KG ND 30 ETHYL BENZENE UG/KG ND 30 ETHYL METHACRYLATE UG/KG ND 30 2-HEXANONE UG/KG ND 30 LIDDOMETHANE UG/KG ND 30 METHYLENE CHLORIDE UG/KG ND 30 METHYLENE CHLORIDE UG/KG ND 30 METHYLENE CHLORIDE UG/KG ND 20 STYRENE UG/KG ND 20 STYRENE UG/KG ND 10 1,1,2,2-TETRACHLOROETHANE UG/KG ND 10 TETRACHLOROETHENE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 30 TRICHLOROETHENE UG/KG ND 10	•				
CIS-1,3-DICHLOROPROPENE				ND	10
TRANS-1,3-DICHLOROPROPENE UG/KG ND 6 1,4-DICHLORO-2-BUTENE UG/KG ND 30 ETHYL BENZENE UG/KG 13 6 ETHYL METHACRYLATE UG/KG ND 30 2-HEXANONE UG/KG ND 20 IODOMETHANE UG/KG ND 30 METHYLENE CHLORIDE UG/KG ND 30 METHYLENE CHLORIDE UG/KG ND 20 STYRENE UG/KG ND 20 STYRENE UG/KG ND 10 1,1,2,2-TETRACHLOROETHANE UG/KG ND 10 TETRACHLOROETHENE UG/KG ND 6 TOLUENE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 6		CIS-1,3-DICHLOROPROPENE	UG/KG	ND	6
ETHYL METHACRYLATE UG/KG ND 30 2-HEXANONE UG/KG ND 20 IODOMETHANE UG/KG ND 30 METHYLENE CHLORIDE UG/KG 27 20 4-METHYL-2-PENTANONE UG/KG ND 20 STYRENE UG/KG ND 10 1,1,2,2-TETRACHLOROETHANE UG/KG ND 10 TETRACHLOROETHENE UG/KG ND 6 TOLUENE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 6		TRANS-1,3-DICHLOROPROPENE	UG/KG	ND	6
ETHYL METHACRYLATE UG/KG ND 30 2-HEXANONE UG/KG ND 20 IODOMETHANE UG/KG ND 30 METHYLENE CHLORIDE UG/KG 27 20 4-METHYL-2-PENTANONE UG/KG ND 20 STYRENE UG/KG ND 10 1,1,2,2-TETRACHLOROETHANE UG/KG ND 10 TETRACHLOROETHENE UG/KG ND 6 TOLUENE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 6		1,4-DICHLORO-2-BUTENE		ND	
ETHYL METHACRYLATE UG/KG ND 30 2-HEXANONE UG/KG ND 20 IODOMETHANE UG/KG ND 30 METHYLENE CHLORIDE UG/KG 27 20 4-METHYL-2-PENTANONE UG/KG ND 20 STYRENE UG/KG ND 10 1,1,2,2-TETRACHLOROETHANE UG/KG ND 10 TETRACHLOROETHENE UG/KG ND 6 TOLUENE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 6		ETHYL BENZENE	UG/KG	13	
IODOMETHANE		ETHYL METHACRYLATE	UG/KG	ND	
METHYLENE CHLORIDE		2-HEXANONE	UG/KG	ND	
4-METHYL-2-PENTANONE UG/KG ND 20 STYRENE UG/KG ND 10 1,1,2,2-TETRACHLOROETHANE UG/KG ND 10 TETRACHLOROETHENE UG/KG ND 6 TOLUENE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 30 TRICHLOROETHENE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 6		IODOMETHANE	UG/KG		
STYRENE UG/KG ND 10 1,1,2,2-TETRACHLOROETHANE UG/KG ND 10 TETRACHLOROETHENE UG/KG ND 6 TOLUENE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 6		METHYLENE CHLORIDE	UG/KG	27	
1,1,2,2-TETRACHLOROETHANE UG/KG ND 10 TETRACHLOROETHENE UG/KG ND 6 TOLUENE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 6					
TETRACHLOROETHENE UG/KG ND 6 TOLUENE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 6					
TOLUENE UG/KG ND 30 1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 6		1,1,2,2-TETRACHLOROETHANE			
1,1,1-TRICHLOROETHANE UG/KG ND 30 1,1,2-TRICHLOROETHANE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 6	_	TETRACHLOROETHENE			
1,1,2-TRICHLOROETHANE UG/KG ND 10 TRICHLOROETHENE UG/KG ND 6					
TRICHLOROETHENE UG/KG ND 6					
TRICHLOROFLUOROMETHANE UG/KG ND 6					
	•	TRICHLOROFLUOROMETHANE	UG/KG	ND	6

[0) Page 8 Date 29-Nov-93

Accession: Client:

311572

GERAGHTY & MILLER

Project Number:

CI0299.002

Project Name: Project Location: N/S

BNR/NAVISTAR

Test:

Analysis Method:

Extraction Method: N/A

VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992.

Matrix:

SOIL

QC Level:

Ι

Lab Id: 007 Client Sample Id: GM-3 10-12'	Sample Date/Time: Received Date:			16-NOV-93 1445 18-NOV-93	
Parameter:	Units:	Results:	Rpt Lmt	s: Q:	
1,2,3 TRICHLOROPROPANE VINYL ACETATE VINYL CHLORIDE TOTAL XYLENES BROMOFLUOROBENZENE 1,2-DICHLOROETHANE-D4	UG/KG UG/KG UG/KG UG/KG %REC/SURR %REC/SURR	ND ND ND ND M* 81	30 10 6 10 74-121 70-121		

%REC/SURR

INITIALS

91

DWB

81-117

Comments:

TOLUENE-D8

ANALYST

^{*} MATRIX INTERFERENCE.

(0) Page 9 Date 29-Nov-93 311572 Accession: Client: GERAGHTY & MILLER CI0299.002 Project Number: Project Name: N/S Project Location: BNR/NAVISTAR VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Test: Analysis Method: Extraction Method: N/A Matrix: SOIL QC Level: Ι 009 Sample Date/Time: Lab Id: 16-NOV-93 1545 Client Sample Id: GM-4 10-12' Received Date: 18-NOV-93 Batch: NAS108 Extraction Date: N/A Blank: B Dry Weight %: Analysis Date: 23-NOV-93 Parameter: Units: Results: Rpt Lmts: Q: ACETONE UG/KG ND 53 ACROLEIN UG/KG ND 530 ACRYLONITRILE UG/KG ND 530 BENZENE UG/KG ND 5 BROMODICHLOROMETHANE UG/KG ND **BROMOFORM** UG/KG ND 10 BROMOMETHANE UG/KG ND 20 2-BUTANONE (MEK) UG/KG ND CARBON DISULFIDE CARBON TETRACHLORIDE UG/KG ND UG/KG ND 10 CHLOROBENZENE UG/KG ND 5 UG/KG CHLOROETHANE ND 30 2-CHLOROETHYLVINYL ETHER UG/KG ND UG/KG UG/KG CHLOROFORM ND 10 CHLOROMETHANE ND 10 CHLORODIBROMOMETHANE UG/KG ND 30 DIBROMOMETHANE UG/KG ND 30 DICHLORODIFLUOROMETHANE UG/KG ND 30 1,1-DICHLOROETHANE UG/KG ND 1,2-DICHLOROETHANE 10 UG/KG ND 1,1-DICHLOROETHENE UG/KG ND TOTAL 1,2-DICHLOROETHYLENE UG/KG 30 ND 1,2-DICHLOROPROPANE UG/KG ND 10 CIS-1,3-DICHLOROPROPENE UG/KG ND 5 TRANS-1, 3-DICHLOROPROPENE UG/KG ND 1.4-DICHLORO-2-BUTENE UG/KG ND 30 ETHYL BENZENE UG/KG 16 ETHYL METHACRYLATE UG/KG UG/KG 30 ND 2-HEXANONE ND 20 IODOMETHANE UG/KG ND 30 METHYLENE CHLORIDE 4-METHYL-2-PENTANONE UG/KG ND 20 UG/KG ND 20 STYRENE UG/KG ИD 10 1,1,2,2-TETRACHLOROETHANE TETRACHLOROETHENE

UG/KG

UG/KG

UG/KG

UG/KG

UG/KG UG/KG

UG/KG

TOLUENE

1,1,1-TRICHLOROETHANE

1,1,2-TRICHLOROETHANE

TRICHLOROFLUOROMETHANE

TRICHLOROETHENE

ND

ND

ND

ND

ND

ND

ND

10

30

30

10

5

5

[0] Page 10 Date 29-Nov-93

Accession:

311572

Client:

GERAGHTY & MILLER

Project Number:

CI0299.002

Project Name:

N/S

Project Location:

BNR/NAVISTAR

Test:

VOLATILES (8240)

Analysis Method:

8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992.

Extraction Method: N/A Matrix:

SOIL Ι

QC Level:

Sample Date/Time: Lab Id: 009 16-NOV-93 1545 Client Sample Id: GM-4 10-12' Received Date: 18-NOV-93

Parameter: 1,2,3 TRICHLOROPROPANE Units: Rpt Lmts: Results: 30 UG/KG ND UG/KG ND 10 ND

ND

M*

107

96 DWB Q:

VINYL ACETATE VINYL CHLORIDE TOTAL XYLENES BROMOFLUOROBENZENE 1,2-DICHLOROETHANE-D4

UG/KG UG/KG %RÉC/SURR %REC/SURR %REC/SURR INITIALS

10 74-121 70-121 81-117

TOLUENE-D8 ANALYST

^{*} MATRIX INTERFERENCE.

[0] Page 11 Date 29-Nov-93 Accession: 311572 GERAGHTY & MILLER Client: Project Number: CI0299.002 Project Name: N/S Project Location: BNR/NAVISTAR Test: VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Analysis Method: Extraction Method: N/A SOIL Matrix: QC Level: Ι Sample Date/Time: Lab Id: 011 17-NOV-93 0815 Client Sample Id: GM-5 2-4' Received Date: 18-NOV-93 Batch: NAS108 Extraction Date: 23-NOV-93 Blank: B Dry Weight %: Analysis Date: Units: Parameter: Results: Rpt Lmts: Q: ACETONE UG/KG 120 11 UG/KG 110 ACROLEIN ND ACRYLONITRILE UG/KG ND 110 BENZENE UG/KG 2 1 BROMODICHLOROMETHANE UG/KG ND 1 BROMOFORM UG/KG ND 2 BROMOMETHANE UG/KG ND 2-BUTANONE (MEK) CARBON DISULFIDE UG/KG UG/KG 22 ND CARBON TETRACHLORIDE UG/KG ND CHLOROBENZENE 1 UG/KG ND CHLOROETHANE UG/KG ND 1 UG/KG 2-CHLOROETHYLVINYL ETHER ND 5 CHLOROFORM UG/KG ND 2 CHLOROMETHANE UG/KG ND **CHLORODIBROMOMETHANE** UG/KG ND **DIBROMOMETHANE** UG/KG ND DICHLORODIFLUOROMETHANE ND UG/KG 1,1-DICHLOROETHANE UG/KG ND 1 1,2-DICHLOROETHANE UG/KG ND 2 1,1-DICHLOROETHENE UG/KG ND UG/KG UG/KG TOTAL 1,2-DICHLOROETHYLENE ND 1,2-DICHLOROPROPANE 2 ND CIS-1,3-DICHLOROPROPENE UG/KG ND 1 UG/KG UG/KG TRANS-1,3-DICHLOROPROPENE ND 1,4-DICHLORO-2-BUTENE ND ETHYL BENZENE UG/KG ND ND ETHYL METHACRYLATE UG/KG 2-HEXANONE UG/KG ND 3 IODOMETHANE UG/KG ND METHYLENE CHLORIDE UG/KG ND 4-METHYL-2-PENTANONE UG/KG UG/KG ND ND STYRENE 1,1,2,2-TETRACHLOROETHANE UG/KG ND TETRACHLOROETHENE UG/KG ND TOLUENE UG/KG ND 1,1,1-TRICHLOROETHANE UG/KG ND

UG/KG

UG/KG

UG/KG

1,1,2-TRICHLOROETHANE

TRICHLOROFLUOROMETHANE

TRICHLOROETHENE

ND

ND

3

[0] Page 12 Date 29-Nov-93

18-NOV-93

Q:

Accession:

311572

Client:

GERAGHTY & MILLER

Project Number: Project Name:

CI0299.002 N/S

Project Location:

BNR/NAVISTAR

Test:

VOLATILES (8240)

Analysis Method:

8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992.

Extraction Method: N/A Matrix:

SOIL

Ι

Client Sample Id: GM-5 2-4'

QC Level:

Lab Id:

011 Sample Date/Time: 17-NOV-93 0815

M*

DWB

Received Date:

81-117

Parameter: Units: Results: Rpt Lmts: 1,2,3 TRICHLOROPROPANE VINYL ACETATE UG/KG ND UG/KG 2 ND VINYL CHLORIDE TOTAL XYLENES UG/KG ND 1 UG/KG ND BROMOFLUOROBENZENE %RÉC/SURR 74-121 85 1,2-DICHLOROETHANE-D4 %REC/SURR 102 70-121

%REC/SURR

INITIALS

Comments:

TOLUENE-D8

ANALYST

^{*} MATRIX INTERFERENCE.

(0) Page 13 Date 29-Nov-93

Accession: 311572

GERAGHTY & MILLER Client:

Project Number: Project Name: CI0299.002 N/S Project Location: BNR/NAVISTAR

VOLATILES (8240) Test: 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Analysis Method:

Extraction Method: N/A Matrix:

SOIL QC Level: I

17-NOV-93 0815 Lab Id: 013 Sample Date/Time: Received Date: Client Sample Id: GM-5 8-10' 18-NOV-93

Batch: NAS108 Extraction Date: N/A

23-NOV-93 Blank: C Dry Weight %: 89 Analysis Date:

-	Parameter: ACETONE ACROLEIN ACRYLONITRILE BENZENE BROMODICHLOROMETHANE BROMOFORM BROMOMETHANE 2-BUTANONE (MEK) CARBON DISULFIDE CARBON TETRACHLORIDE CHLOROBENZENE CHLOROETHANE 2-CHLOROETHYLVINYL ETHER	Units:	Results:	Rpt Lmts: Q:
	ACETONE	UG/KG	230	56
	ACROLEIN		ND	560
	ACRYLONITRILE	UG/KG	ND	560
-	BENZENE		ND	6
	BROMODICHLOROMETHANE		ND	6
	BROMOFORM		ND	10
	BROMOMETHANE		ND	6
	2-BUTANONE (MEK)		ND	20
_	CARBON DISULFIDE		ND	6
	CARBON TETRACHLORIDE		ND	10
	CHLOROBENZENE		ND	6
	CHLOROETHANE		ND	6
	2-CHLOROETHYLVINYL ETHER		ND	30
	CHLOROFORM		ND	10
	CHLOROMETHANE		ND	10
	CHLORODIBROMOMETHANE		ND	30
_	DIBROMOMETHANE	UG/KG	ND	30
	CHLOROFORM CHLOROMETHANE CHLOROMETHANE CHLOROMETHANE DIBROMOMETHANE DICHLORODIFLUOROMETHANE 1,1-DICHLOROETHANE 1,2-DICHLOROETHANE 1,1-DICHLOROETHANE 1,1-DICHLOROETHANE		ND	30
	1,1-DICHLOROETHANE	UG/KG	ND	6
	1,2-DICHLOROETHANE	UG/KG	ND	10
	1,1-DICHLOROETHENE	UG/KG UG/KG UG/KG UG/KG	ND	6
	TOTAL 1,2-DICHLOROETHYLENE 1,2-DICHLOROPROPANE	UG/KG	ND	30
	1,2-DICHLOROPROPANE	UG/KG	ND	10
		UG/KG	ND	6
	TRANS-1,3-DICHLOROPROPENE	UG/KG	ND	6
_	1,4-DICHLORO-2-BUTENE		ND	30
_	ETHYL BENZENE	UG/KG	10	6
			ND	30
	2-HEXANONE	/ - ·	ND	20
	IODOMETHANE		ND	30
-	METHYLENE CHLORIDE		33	20
	4-MEIIIID-Z-FENIAMONE		ND	20
	CALA D M. M.M.		ND	10
	1,1,2,2-TETRACHLOROETHANE		ND	10
_	TETRACHLOROETHENE		ND	6
-	TOLUENE		ND	30
			ND	30
	1,1,2-TRICHLOROETHANE		ND	10
	INICIDONOLIIDND	/ - · -	ND	6
-	TRICHLOROFLUOROMETHANE	UG/KG	ND	6

[0) Page 14 Date 29-Nov-93

Accession: Client:

311572

GERAGHTY & MILLER

Project Number: Project Name:

CI0299.002

N/S

Project Location:

BNR/NAVISTAR

Test:

VOLATILES (8240)

Analysis Method: Extraction Method: N/A

8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992.

Matrix:

SOIL

Ι

Client Sample Id: GM-5 8-10'

013

QC Level:

Lab Id:

Sample Date/Time: 17-NOV-93 0815 Received Date: 18-NOV-93

Parameter:	Units:	Results:	Rpt Lmts:	Q:
1,2,3 TRICHLOROPROPANE VINYL ACETATE VINYL CHLORIDE TOTAL XYLENES BROMOFLUOROBENZENE 1,2-DICHLOROETHANE-D4 TOLUENE-D8 ANALYST	UG/KG UG/KG UG/KG UG/KG %REC/SURR %REC/SURR %REC/SURR INITIALS	ND ND ND ND M* 104 93 DWB	30 10 6 10 74-121 70-121 81-117	

Comments:

^{*} MATRIX INTERFERENCE.

[0) Page 15 Date 29-Nov-93

Accession: 311572

Client: GERAGHTY & MILLER

Project Number: CI0299.002
Project Name: N/S
Project Location: BNR/NAVISTAR
Test: VOLATILES (8240)

Test: VOLATILES (8240)
Analysis Method: 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992.

Extraction Method: N/A
Matrix: SOIL
QC Level: I

Lab Id: 015 Sample Date/Time: 17-NOV-93 0940

Client Sample Id: GM-6 10-12' Received Date: 18-NOV-93

Batch: NAS108 Extraction Date: N/A

Blank: C Dry Weight %: 85 Analysis Date: 24-NOV-93

-	Parameter:	Units:	Results:	Rpt Lmts: Q:
	ACETONE	UG/KG	200	59
	ACROLEIN	UG/KG	ND	590
	ACRYLONITRILE	UG/KG	ND	590
-	BENZENE		ND	6
	BROMODICHLOROMETHANE		ND	6
	BROMOFORM		ND	10
	BROMOMETHANE		ND	6
	2-BUTANONE (MEK) CARBON DISULFIDE	UG / KG	37	20
-	CARBON DISULFIDÉ		ND	6
	CARBON TETRACHLORIDE	UG/KG	ND	10
	CHLOROBENZENE	UG / KG	ND	6
	CHLOROETHANE	UG/KG	ND	6
***	2-CHLOROETHYLVINYL ETHER	UG/KG	ND	30
	CHLOROFORM	UG/KG	ND	10
	CHLOROMETHANE	UG/KG	ND	10
	CHLORODIBROMOMETHANE	UG/KG	ND	30
_	DIBROMOMETHANE	UG/KG	ND	30
_	DICHLORODIFLUOROMETHANE		ND	30
	1,1-DICHLOROETHANE	UG/KG	ND	6
	1,2-DICHLOROETHANE	UG/KG	ND	10
	1,1-DICHLOROETHENE	UG/KG	ND	6
-	TOTAL 1,2-DICHLOROETHYLENE	UG/KG	ND	30
	1,2-DICHLOROPROPANE	UG/KG	ND	10
	CIS-1,3-DICHLOROPROPENE		ND	6
	TRANS-1,3-DICHLOROPROPENE		ND	6
	1,4-DICHLORO-2-BUTENE		ND	30
_	ETHYL BENZENE		8	6
	ETHYL METHACRYLATE		ND	30
	2-HEXANONE		ND	20
	IODOMETHANE	7	ND	30
-	METHYLENE CHLORIDE		31	20
	4-METHYL-2-PENTANONE		ND	20
	STYRENE		ND	10
	1,1,2,2-TETRACHLOROETHANE	7	ND	10
-	TETRACHLOROETHENE			6
_	TOLUENE			30
				30
	1,1,2-TRICHLOROETHANE	/		10
	TRICHLOROETHENE	7 . T	ND	6
-	TRICHLOROFLUOROMETHANE	UG/KG	7	6

(0) Page 16 Date 29-Nov-93

Accession: 311572

GERAGHTY & MILLER Client:

CI0299.002

N/S

Project Number:
Project Name:
Project Location: BNR/NAVISTAR

Test:

VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Analysis Method:

Extraction Method: N/A SOIL Matrix: QC Level: Ι

Lab Id:	015	Sample Date/Time:	17-NOV-93 0940
Client Sample Id:	GM-6 10-12'	Received Date:	18-NOV-93

Parameter:	Units:	Results:	Rpt Lmts:	Q:
1,2,3 TRICHLOROPROPANE	UG/KG	ND	30	
VINYL ACETATE	UG/KG	ND	10	
VINYL CHLORIDE	UG/KG	ND	6	
TOTAL XYLENES	UG/KG	ND	10	
BROMOFLUOROBENZENE	%REC/SURR	M*	74-121	
1,2-DICHLOROETHANE-D4	%REC/SURR	95	70-121	
TOLUENE-D8	%REC/SURR	91	81-117	
ANALYST	INITIALS	DWB		

Comments:

^{*} MATRIX INTERFERENCE.

[0) Page 17 Date 29-Nov-93

"Method Report Summary"

Accession Number: 311572

GERAGHTY & MILLER CI0299.002 Client:

Project Number: CI0299.002
Project Name: N/S
Project Location: BNR/NAVISTAR
Test: VOLATILES (82 VOLATILES (8240)

Client Sample Id:	Parameter:	Unit:	Result:
■ GM-1 2-4'	ACETONE	UG/KG	39
	METHYLENE CHLORIDE	UG/KG	7
GM-1 8-10'	ACETONE	UG/KG	8 4 13 28
	ETHYL BENZENE	UG/KG	13
	METHYLENE CHLORIDE	UG/KG	28
•	TOTAL XYLENES	UG/KG	88
GM-2 10-12'	ACETONE	UG/KG	260
	2-BUTANONE (MEK)	UG [′] /KG	
	ETHYL BENZENE	UG/KG	11
	TRICHLOROFLUOROMETHANE	UG/KG	9
	TOTAL XYLENES	UG/KG	56
GM-3 10-12'	ACETONE	UG/KG	77
J. 5 54 22	ETHYL BENZENE	UG/KG	40 11 9 56 77 13 27
	METHYLENE CHLORIDE	UG/KG	27
GM-4 10-12'	ETHYL BENZENE	UG/KG	16
GM-5 2-4'	ACETONE	UG/KG	120
01. 5 2 4	BENZENE	UG/KG	2
	2-BUTANONE (MEK)	UG/KG	22
_	TRICHLOROFLUOROMETHANE	UG/KG	22 3
GM-5 8-10'	ACETONE	UG/KG	230
GM 5 0 10	ETHYL BENZENE	UG/KG	10 ,
	METHYLENE CHLORIDE	UG/KG	33
GM-6 10-12'	ACETONE	UG/KG	200
GM-0 10-12	2-BUTANONE (MEK)	UG/KG	37
	ETHYL BENZENE	UG/KG	37 8
	METHYLENE CHLORIDE	UG/KG	31
			7
	TRICHLOROFLUOROMETHANE	UG/KG	,

Appendix C Well Construction Logs



_	Project CI0299.002	Wall GM-1
2. Šrt	Town/City	
LAND SURFACE	County	
•		
8.25 inch diameter	Permit No.	
drilled hole	Land-Surface Elevation	
NA	and Datumfeet	☐ Surveyed
Well casing, 2.00 inch diameter,	111, 100	☐ Estimated
PVC Inch diameter,	Installation Date(s)	
Backfill .	Installation Date(s) 11/16/93 Drilling Method 15/A	A 11
Backfill Cenent Cenent	Drilling Contractor Ruch ? Soul	Gulling
- ИИ	Drilling Fluid	-
0.5 _n .		
	Development Technique(s) and Date(s)	
Bentonite 🗆 slurry		
<u>5.υ</u> ft* 🗗 pellets		
	Fluid Loss During Drilling	gallons
<u> </u>	Water Removed During Development	-
Well Screen.		
→ J.C.J. inch diameter	Static Depth to Water	
	Pumping Depth to Water	
Thein was solved	Pumping Duration hou	
■ Gravel Pack	Yieldgpm	Date
Sand Pack	Specific Capacity	gpm/ft
Formation Collapse	Well Purpose	
1 18,0 u.		· ·
<u> 19.0 ft*</u>	Remarks	· · · · · · · · · · · · · · · · · · ·
<u> </u>		
Measuring Point is		
Top of Well Casing		
Unless Otherwise Noted.		
*Depth Below Land Surface	. 20 1	
Deput Delow Land Surface	Brongrad by Stephen How	1
•	Prepared by	



		cu
-	Project <u>CIO299.002</u>	Well <u>6 M - Z</u>
	Town/City	
	County	State
// la one	Permit No.	
$\frac{8.25}{1000}$ inch diameter	Land-Surface Elevation	
drilled hole	and Datum feet	☐ Surveyed
Well casing,		☐ Estimated
inch diameter,	Installation Date(s) 11/16/92	
- PVC	1164	
Backfill Cener	Drilling Method HSA Drilling Contractor Ruck Sol	Dulling
- Consumer Control	Drilling Fluid _ n/a	
0.5 tt.	Drining Fluid	
ft*	Development Technique(s) and Date(s)	
Bentonite ☐ slurry	Development reclinique(s) and Date(s)	
<u>5, 0</u> ft* □ pellets		
	C. M. D. L. D. W.	
<u> </u>	Fluid Loss During Drilling	_
	Water Removed During Development	_
Well Screen. 2.00 inch diameter	Static Depth to Water	
	Pumping Depth to Water	
Stainless skel	Pumping Duration hor	
■ Gravel Pack	Yieldgpm	Date
Sand Pack	Specific Capacity	gpm/ft
Formation Collapse	Well Purpose	
18.0 m		
- 19-0 m·	Remarks	
······································		
_		·····
Measuring Point is		
Top of Well Casing		
 Unless Otherwise Noted. 		
*Depth Below Land Surface	00	1 54
., = =	Propagad by	1209



_	Project 20299.002	
2. Sft	•	
LAND SURFACE	Town/City	
• NN .	County	
8,25 inch diameter	Permit No.	
_ drilled hole	Land-Surface Elevation	
- / / M	and Datum feet	☐ Surveyed
Well casing,		☐ Estimated
inch diameter,	Installation Date(s) 11/16/93	
Backfill	Drilling Method HSA	O 7/1
Backfill Cement	Drilling Contractor Pork Sol	irelleig
- ии	Drilling Fluid	
0.5_{m}		
- "	Development Technique(s) and Date(s)	
Bentonite		
<u>5. ს</u> ft* □ _r pellets		
	Fluid Loss During Drilling	gailons
■ <u>7.0</u> ft*	Water Removed During Development	_
Well Screen.	Static Depth to Water	<u>-</u>
<u> 2.υυ</u> inch diameter	Pumping Depth to Water	
Stands: Steel 0.010 slot	Pumping Duration hou	
	Yield gpm	Date
Gravel Pack	Specific Capacity	
Sand Pack Formation Collapse		
	Well Purpose	
17.0 m·		
1 // On		
- <u> </u>	Remarks	
_		
Measuring Point is		
Top of Well Casing Unless Otherwise Noted.		
Chiess Otherwise Moter.		
*Depth Below Land Surface		1 x



(UNCONSOLIDATED)

-	Project CI 0299.002	Well_ <u>6M-</u> 4
2.5ft LAND SURFACE	Town/City	
	County	State
	Permit No.	
8,25 inch diameter	Land-Surface Elevation	
drilled hole	and Datumfeet	☐ Surveyed
Well casing,		☐ Estimated
inch diameter,	Installation Date(s) 11/16/93	_
	Drilling Method HSA	_
Backfill Grout Cenart	Drilling Contractor Ruch & Soul	Duller
-	Drilling Fluid _ n / a	
	Drining Fluid	
0.5 ft.	Development Technique(a) and Dete(a)	
Bentonite □ slurry	Development Technique(s) and Date(s)	
5.0 ft* № pellets		
<u> </u>	Fluid Loss During Drilling	-
	Water Removed During Development	-
₩ell Screen.	Static Depth to Water	
stainbis sted 0.010 slot	Pumping Depth to Water	
	Pumping Duration ho	
■ Gravel Pack	Yieldgpm	Date
Sand Pack	Specific Capacity	gpm/ft
Formation Collapse	Well Purpose	
		·
170m		
- Y.O m.	Remarks	
		
Measuring Point is		
Top of Well Casing		
Unless Otherwise Noted.		
*Depth Below Land Surface		.154
_	Prepared by	HX4

Southprint 89-0978



-	Project CT0299.00Z	well <u>6M-5</u>
LAND SURFACE	Town/City	
	County	State
	Permit No.	
8.25 inch diameter	Land-Surface Elevation	
drilled hole	and Datum feet	☐ Surveyed
Well casing,		☐ Estimated
inch diameter,	Installation Date(s)	
	Drilling Method HAA	
Backfill Conent	Drilling Contractor Pork Soul	Dulle
	Drilling Fluid <u>N/a</u>	
0.5 _n .		
- π-	Development Technique(s) and Date(s)	
Bentonite 🗆 slurry		
# 件。ft* B-pellets		
_ 6 _{ft*}	Fluid Loss During Drilling	gailons
• — — • • • • • • • • • • • • • • • • •	Water Removed During Development	gallons
Well Screen.	Static Depth to Water	feet below M.P.
jnch diameter	Pumping Depth to Water	feet below M.P.
5-10 <u>0:070</u> slot	Pumping Duration hou	ırs
■ Gravel Pack	Yieldgpm	Date
Sand Pack	Specific Capacity	gpm/ft
Formation Collapse	Well Purpose	
•		
1 b. on.		
· 17.0 m.	Remarks	
_		
Measuring Point is		
Top of Well Casing		
Unless Otherwise Noted.		
*Depth Below Land Surface		1 /4



(UNCONSOLIDATED)

_	ATA 900 AA 2	CM-C
\Box \Box \mathcal{F}_{α}	Project <u>CIO 209. 00 2</u>	Well G/ V
2. Sft LAND SURFACE	Town/City	
-	County	State
8.25	Permit No.	
drilled hole	Land-Surface Elevation	
	and Datumfeet	☐ Surveyed
Well casing,		☐ Estimated
- 230 inch diameter	Installation Date(s) 11/17/53	
	Drilling Method HSA Drilling Contractor Rock 7 Soc	
Backfill Cenart	Drilling Contractor Rock of Soc	1 Dulles
ИИ	Drilling Fluid _ N/a	
_ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
- "	Development Technique(s) and Date(s)	
Bentonite ☐ slurry		
# 4.0 ft* Œpellets		
6.0 ft.	Fluid Loss During Drilling	gallons
	Water Removed During Development	gallons
Well Screen.	Static Depth to Water	feet below M.P
= 2.50 inch diameter \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Pumping Depth to Water	feet below M.P
SION	Pumping Duration ho	ours
■ Gravel Pack	Yieldgpm	Date
Sand Pack	Specific Capacity	_ gpm/ft
Formation Collapse	Well Purpose	
16.0 ft*		
- 17.0 m.	Remarks	
_		
Measuring Point is		
Top of Well Casing		
Unless Otherwise Noted.		

*Depth Below Land Surface

Appendix D

Well Development Logs

2. Well development method surged with bailer and bailed surged with bailer and pumped 61 surged with bailer and pumped 62 surged with block and pumped 62 surged with block and pumped 70 compressed air 20 bailed only pumped only 51 pumped slowly 50 Other 13. Water clarity 12. Sediment in well bottom 13. Water clarity 13. Water clarity 14. Sediment in well bottom 13. Water clarity 14. Sediment in well bottom 15. Sediment in well bottom 14. Sediment in well bottom 14. Sediment in well bottom 14. Sediment in well bottom 15. Sediment in well bottom 14. Sediment in well bottom 15. Sediment in well bottom 14. Sediment in well bottom 15. Sediment in well bottom 14. Sediment in well bottom 15. Sediment in well bottom 14. Sediment in well bottom 15. Sediment in	Facility/Project Name	County Name		Well Name 6 M	
2. Well development method surged with bailer and pumped 61 61 52 62 62 62 62 63 64 64 65 64 65 64 65 64 65 65	License, Permit or Monitoring Number	County Code	Wis. Unique Well Nu	mber DNR Wel	l Number
2. Well development method surged with bailer and bailed surged with bailer and pumped surged with block and pumped surged with block and pumped compressed air bailed only pumped slowly 50 mm 10 pumped only pumped slowly 50 mm 12. Sediment in well bottom 13. Time spent developing well 50 min 6. Volume of water added (if any) 6. Source of water added (if any) 6. Source of water added (if any) 7. Source of water added (if any) 7. Source of water added? 7. Yes 7. No 11. Source 12. Source of water added? 7. Yes 7. No 11. Source 12. Source of water added? 7. Yes 7. No 11. Source 12. Source of water added? 7. Yes 7. No 11. Source 12. Source of water added? 7. Yes 7. No 11. Source 12. Source 13. Source of water added? 7. Yes 7. No 11. Source 13. Source 13. Source of water added? 7. Yes 7. No 11. Source 13. Source 13. Source 14. Total suspended 15. COD 7. Source 14. Total suspended 15. Source 14. Tota	1. Can this well be purged dry?	☐ Yes 🔽 No	11 Domits to Water	Before Development	After Development
Well developed by: Person's Name and Firm Fill in if drilling fluids were used and well is at solid waste facility: Fill in if drilling fluids were used and well is at solid waste facility: 14. Total suspended mg/s 15. COD mg/s 15. COD mg/s 16. Analysis performed on water added? Yes No (If yes, attach results) Additional comments on development: Well developed by: Person's Name and Firm lhearby certify that the above information is true and correct to the of my knowledge 1	surged with bailer and bailed surged with bailer and pumped surged with block and bailed surged with block and pumped surged with block, bailed and pumped compressed air bailed only pumped only pumped slowly Other 3. Time spent developing well \(\frac{C_1}{C_2}, C_2^2, \frac{C_2}{C_1}, C_2^2, \frac{C_2}{C_2}, \frac{C_2}{C_1}, C_2^2, \frac{C_2}{C_2}, \frac{C_2}{C_1}, C_2^2, \frac{C_2}{C_2}, \frac{C_2}{C_1}, \frac{C_2}{C_2}, \	61 42 62 70 20 10 51 50 50 71 11 11 11 11 11 11 11 11 11 11 11 11	(from top of well casing) Date Time 12. Sediment in well bottom	($\frac{1}{m} \frac{1}{m} \frac{7}{d} \frac{7}{d} \frac{7}{y}$ $-\frac{1}{2} \cdot \frac{50}{m} \frac{1}{m}
Well developed by: Person's Name and Firm I hearby certify that the above information is true and correct to the of my knowledge	7. Volume of water removed from well 8. Volume of water added (if any) 9. Source of water added 10. Analysis performed on water added?	25.0 gal.	14. Total suspended solids	mg/l	mg/
of my knowledge					
Signature:	• •		of my knowledge	above information is t	rue and correct to the
	Signature:		Signature:	7.0	

NOTE: Shaded areas are for DNR use only. See instructions for more information

State of Wisconsin Department of Natural Resources MONITORING WELL DEVELOPMENT Form 4400-113B 4/90

Facility/Project Name		County Name		Well Name Gr	7
License, Permit or Monitoring Number		County Code	Wis. Unique Well Nu		ell Number
1. Can this well be purged dry?	×ا	'es 🗌 No	11. Depth to Water	Before Development	After Developme
2. Well development method surged with bailer and bailed surged with bailer and pumped surged with block and bailed surged with block and pumped surged with block, bailed and pumped compressed air bailed only pumped only pumped slowly Other	_9 _2 _4 _25	9 gal. 9 gal. 9 gal.	(from top of well casing) Date Time 12. Sediment in well bottom 13. Water clarity Fill in if drilling fluids 14. Total suspended solids 15. COD	2:	I/ / T / T / T / T / T / T / T / T / T /
Additional comments on development:					
Well developed by: Person's Name and Firm			I hearby certify that to	he above information i	s true and correct to th
			717	-111 J	

NOTE: Shaded areas are for DNR use only. See instructions for more information

Facility/Project Name		County Name		Well Name	3
License, Permit or Monitoring Number		County Code	Wis: Unique Well Nu	mber DNR Well	Number
1. Can this well be purged dry?	₩	Yes 🗌 No		Before Development	After Development
2. Well development method			11. Depth to Water (from top of	_13.41 11	1352
surged with bailer and bailed	ᅜ	41	well casing)		
surged with bailer and pumped	—	61	'		
surged with block and bailed	H	42	Date	$\frac{1}{m}\frac{1}{m}\frac{1}{m}\frac{1}{d}\frac{1}{d}\frac{1}{d}\frac{1}{y}\frac{1}{y}$	11,18,9
surged with block and pumped	ă	62	Date	लेल विंत प्रेप	$\frac{m}{m}$ $\frac{d}{d}$ $\frac{d}{d}$ $\frac{d}{y}$
surged with block, bailed and pumped	7[70			
compressed air	H	20	Time	_3 :45 □ a.m.	10 .45 🖽
bailed only		10			 -
pumped only	Η	51	12. Sediment in well		<u>O</u> inc
pumped slowly		50	bottom	inches	<u></u> inc
Other	ä	1.11115	13. Water clarity	Clear [] 04	Class C7 A4
Court	ں	****	15. Water clarity	Turbid 🔀 04	Clear [] ()4 Turbid [] ()4
on one can be a series of the	(70 min		(Describe)	
3. Time spent developing well		10 min			(Describe)
19.57	تطد	1.9.		Black,	Black
4. Depth of well (from top of well casing)	_ Z _	i. ii.		product shown	JULDIN, od
F F · 1 · 1 · 1 ·)	_ලුව _{in.}		-	
5. Inside diameter of well	_=	. <u></u> in.			
6 Valuma of materials Elements and					
 Volume of water in filter pack and well casing 	3	8 .			
·· Jii Annuis		. <u>9</u> gal.	Fill in if drilling fluids	were used and well is at	solid waste facility
7. Volume of water removed from well 🛵 🔿	2=	gal.			i come made racinty.
7. Volume of water femoved from well (_/==	gai.	14. Total suspended	mg/l	mg/i
8. Volume of water added (if any)			solids		ing/i
o. Volume of water added (II any)		.♥ gal.			
9. Source of water added			15. COD	mg/l	mg/l
10. Analysis performed on water added? (If yes, attach results)	Y	′es □ No		I	I
Additional comments on development:			6-10 6	1	2 2 - 0 -
waterther divident. of	11 64	is surgare	200. In where	in bracks i	y r gen (
watertles drivel unt. M	ter	ARRITHMA :	an Iral was	removed int	I tolar
W. 3. 3. 3. 3. 4. 3. 4. 3. 4. 3. 4. 3. 4. 3. 4. 3. 4. 3. 4. 3. 4. 3. 4. 3. 4. 3. 4. 3. 4. 3. 4. 3. 4. 3. 4. 3.		<i>((((((((((</i>	7.	- when me	n river in
agree . Ch 11/15/62	UA	addition	I Ligal non	covered bates	weit -1
- N // V/ //	- 4,4		<i>J.</i>		- ales
tax.				<u>-</u>	
Well developed by: Person's Name and Firm			I hearby certify that the	he above information is t	rue and correct to the
• •			of my knowledge	<u> </u>	
			1. \land	Z/ (\TT.A	
_					
Signature:			Signature:	ALL THE PROPERTY OF THE PROPER	
Signature:			Signature:	Jan Jan	

		County Name		Well Name 6'M-	Ч
License, Permit or Monitoring Number		County Code	Wis. Unique Well Nu		Number ———
. Can this well be purged dry?	□ Y	es 🖸 No	11. Depth to Water	Before Development	After Developme
2. Well development method			(from top of	12.77 ft.	13.3/_
surged with bailer and bailed		41	well casing)	ļ	
surged with bailer and pumped		61			
surged with block and bailed		42	Date	$\frac{1!}{m m} / \frac{18}{d} / \frac{73}{y}$	11/18/
surged with block and pumped		62		mm 'd d 'y y	लेल 'वं वं 'उ
surged with block, bailed and pumped		70		4 4 5 57 sm	
compressed air		20	Time		4.∞
bailed only	$\overline{\Box}$	10			
pumped only	ä	51	12. Sediment in well	inches	in
pumped slowly	ō	50	bottom	inches	· un
Other	ī		13. Water clarity	Clear 04	Clear 04
				Turbid 1 04	Turbid 04
. Time spent developing well		タン min		(Describe)	(Describe)
17.60 19.60		<u>.</u>		Block	Black
Depth of well (from top of well casing)	19	ft.			
. Depth of well (from top of well casing)	-4-	. <u> </u>		product stuck	- Clavily
. Inside diameter of well	2	. <u>0 0</u> in.			odor
Volume of water in filter pack and well casing	<u>-4</u> .	∐ gal.			
	• •	, -	Fill in if drilling fluids	were used and well is at	solid waste facility:
. Volume of water removed from well	<u> 30</u>	_ 8	14. Total suspended	mg/l	mg
. Volume of water added (if any)		2 gal.	solids		
. Source of water added			15. COD	mg/l	mg/
O. Analysis performed on water added? (If yes, attach results)	□ Y	es 🗌 No		l	!
Additional comments on development:					

NOTE: Shaded areas are for DNR use only. See instructions for more information

Facility/Project Name	County Name		Well Name 6 M-5	
License, Permit or Monitoring Number	County Code	Wis. Unique Well Nu	mber DNR Well	Number — — —
1. Can this well be purged dry?	Yes 🗌 No	11. Depth to Water	Before Development	After Developmen
2. Well development method surged with bailer and bailed surged with bailer and pumped surged with block and bailed surged with block and pumped surged with block, bailed and pumped compressed air bailed only pumped only pumped slowly	61 42 62	(from top of well casing) Date Time	$ \frac{13.40}{\text{mm}} \text{ ft.} $ $ \frac{11}{\text{mm}} \frac{18}{\text{d}} \frac{93}{\text{y}} $ $ \frac{10.00}{\text{p.m.}} $	_// <u>Zo</u> 🖺
pumped only pumped slowly Other	51 50 3	12. Sediment in well bottom 13. Water clarity		Q inc
7. Volume of water removed from well $\sqrt{}$	70 min ft. 3.3 gal. 4.0 gal.	Fill in if drilling fluids	Turbid (2) 04 (Describe) Hand graduf Second of the secon	Turbid 7 04 (Describe) 13 (1) Starting of the second of t
8. Volume of water added (if any) 9. Source of water added	 gal.	solids	mg/l	mg/
10. Analysis performed on water added? (If yes, attach results)	Yes No		l	
Additional comments on development: Will Byol Cycles conflict	I baileer	Shy after total of 1	5gal 3 4gal same	ablen.
Well developed by: Person's Name and Firm	 -	I hearby certify that the of my knowledge	he above information is to	rue and correct to the
Signature:		Signature:	store Hond	

cility/Project Name County Name			Well Name 6M-6	
License, Permit or Monitoring Number	County Code	Wis. Unique Well Nu	mber DNR We	II Number
1. Can this well be purged dry?	Yes 🗌 No	11. Depth to Water	Before Development	After Development
2. Well development method surged with bailer and bailed surged with bailer and pumped surged with block and bailed surged with block and pumped surged with block, bailed and pumped compressed air bailed only pumped only pumped slowly Other	41 61 42 62 70 20 10 51 50	(from top of well casing) Date Time 12. Sediment in well bottom 13. Water clarity	$ \frac{1}{m} \frac{1}{m} \frac{8}{d} \frac{73}{y} \frac{7}{y} $ $ -\frac{9}{25} \frac{24.m}{p.m} $ $ -\frac{5}{25} \frac{5}{m} \text{ inches} $ Clear $\boxed{04}$	Clear ()4
6. Volume of water in filter pack and well casing	. <u>O</u> in. . <u>3</u> gai <u>O</u> gai gai.	Fill in if drilling fluids 14. Total suspended solids 15. COD	Turbid (1) 04 (Describe) Black, product Share were used and well is a mg/l mg/l	at solid waste facility:
ageles performed.	bailed of		H I Sal.	
Well developed by: Person's Name and Firm Signature:		of my knowledge Signature:	X LL A	•

Appendix E

Water Sampling Logs



Project/No. Navistar/BNR/CI0299			
Site Location Rock Island, Illi	inois		
Site/Well No. GM-1	Coded/ Replicate No	NA	Date 11-30-93
Weather	Time Sampling Began	1640	Time Sampling Completed
	EVACUATI	ion data	
Description of Measuring Point (MP)	Top of inner	casing	
Height of MP Above/Below Land Surfa	ce <u>2.06</u>	MP Elevation 564.8	36
Total Sounded Depth of Well Below MF	19.19	Water-Level Elevation	553.20
Held Depth to Water Below	MP11.66	Diameter of Casing_	2-inch
Wet Water Column in		Gallons Pumped/Bail Prior to Sampling	ed 3.75
Gallons per I	Foot0.16		
	Well1.20	Sampling Pump Intal (feet below land surfa	ke Setting ace) NA
	41 om		
Evacuation Method Dedicated ba	ITTEL		
\$	sampling data/fii	ELD PARAMETERS	
ColorOdor Other (specific ion; OVA; HNU; etc.)	SAMPLING DATA/FII	ELD PARAMETERS arance	Temperature14.6oF
ColorOdor Other (specific ion; OVA; HNU; etc.)	SAMPLING DATA/FII	ELD PARAMETERS arance	Temperature14.6oF
ColorOdor Other (specific ion; OVA; HNU; etc.) Specific Conductance,	PH_6.26	ELD PARAMETERS arance	Temperature 14.6 °F
ColorOdor Other (specific ion; OVA; HNU; etc.) Specific Conductance,	PH_6.26	ELD PARAMETERS arance rope.	Temperature 14.6 °F
ColorOdor Other (specific ion; OVA; HNU; etc.) Specific Conductance,	pH_6.26 bailer; nylon Container D From Lab _X_	ELD PARAMETERS arance rope.	Temperature 14.6 °F
ColorOdorOther (specific ion; OVA; HNU; etc.) Specific Conductance,	Appea pH_6.26 bailer; nylon Container D From Lab X 2 x 40	rope.	Temperature14.6oF
ColorOdor Other (specific ion; OVA; HNU; etc.) Specific Conductance,	Appea pH_6.26 bailer; nylon Container D From Lab _X	rope. Description or G&M	Preservative HCL, 4°C
ColorOdorOther (specific ion; OVA; HNU; etc.) Specific Conductance,	pH_6.26 bailer; nylon Container D From Lab _X	rope. Description or G&M mL r, amber	Preservative HCL, 4°C 4°C
ColorOdorOther (specific ion; OVA; HNU; etc.) Specific Conductance,	Appea Appea pH_6.26 bailer; nylon Container D From Lab X 2 x 40 1-Lite: 750 mL	rope. Description or G&M mL r, amber r, amber	Preservative HCL, 4°C 4°C
ColorOdorOther (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cm580 Sampling Method and Material PVC Constituents Sampled VOCs PNAs PCBs Lead Remarks	Appea Appea pH_6.26 bailer; nylon Container D From Lab X 2 x 40 1-Lite: 750 mL Auer	rope. Pescription or G&M mL r, amber r, amber plastic G VOLUMES	Preservative HCL, 4°C 4°C



	99.001	<u> </u>	Page1o
Site Location Rock Island, II	linois		
Site/Well No. GM-2	Coded/ _ Replicate No	NA	Date _11-30-93
Weather	Time Sampling Began	1600	Time Sampling Completed
	EVACUATI	on data	
Description of Measuring Point (MP)_	Top of inner	casing	
Height of MP Above/Below Land Surfa	ace <u>1.8</u>	MP Elevation564	60
Total Sounded Depth of Well Below M	P 19.97	Water-Level Elevation_	552.28
Held Depth to Water Below	MP 12.32	Diameter of Casing_	
Wet Water Column in	Well7.65	Gallons Pumped/Baile Prior to Sampling	3.75
Gallons per	Foot0.16		
Gallons in	Well1.22	Sampling Pump Intake (feet below land surface	
Evacuation Method Dedicated	bailer		
	SAMPLING DATA/FIE	ELD PARAMETERS	
ColorOdor	Appea	arance	Temperature15.2
	Appea	arance	
ColorOdor Other (specific ion; OVA; HNU; etc.) _ Specific Conductance, umhos/cm690	Appea	arance	
ColorOdorOther (specific ion; OVA; HNU; etc.) _	Appea	rope.	
ColorOdor Other (specific ion; OVA; HNU; etc.) _ Specific Conductance, umhos/cm690	Appea	rope.	
ColorOdor Other (specific ion; OVA; HNU; etc.) _ Specific Conductance,	Appea	rope. Description or G&M	
ColorOdor Other (specific ion; OVA; HNU; etc.) _ Specific Conductance, umhos/cm690 Sampling Method and MaterialPV0 Constituents Sampled	AppeaAppea	rope. Description or G&M	Preservative
ColorOdor Other (specific ion; OVA; HNU; etc.) _ Specific Conductance, umhos/cm690 Sampling Method and MaterialPV0 Constituents Sampled VOCs	AppeaAppea	rope. Pescription or G&M	Preservative HCL, 4°C 4°C
ColorOdor Other (specific ion; OVA; HNU; etc.) _ Specific Conductance, 690 Sampling Method and MaterialPV0 Constituents SampledVOCs	AppeaAppea	rope. Pescription or G&M 0 mL er, amber	Preservative HCL, 4°C 4°C
ColorOdor Other (specific ion; OVA; HNU; etc.) _ Specific Conductance, umhos/cm690 Sampling Method and MaterialPV0 Constituents SampledVOCs	Appea Appea C bailer; nylon Container D From Lab	rope. Pescription or G&M O mL er, amber er, amber	Preservative HCL, 4°C 4°C
ColorOdor Other (specific ion; OVA; HNU; etc.) _ Specific Conductance,	Appea Appea C bailer; nylon Container D From Lab	rope. Pescription or G&M O mL er, amber er, amber L, plastic	Preservative HCL, 4°C 4°C

Southprint 89-1473



	•		
Site Location Rock Island, Il	llinois		
Site/Well No. GM-3	Coded/ Replicate No.	NA	Date11-30-93
Weather	Time Samplino Began	1500	Time Sampling Completed
	EVACUA	TION DATA	
Description of Measuring Point (MP	y Top of inner	casing	
Height of MP Above/Below Land S	urface	MP Elevation565	.67
Total Sounded Depth of Well Below	MP 20.05	Water-Level Elevation	552.02
Held Depth to Water Be	low MP 13.65	•	
Wet Water Column	in Well6.40	Gallons Pumped/Bail Prior to Sampling	
Gallons r	per Foot 0.16		
·	in Well 1.02	Sampling Pump Intal (feet below land surfa	
Evacuation MethodDedicate	d bailer		
		TELD DADAMETEDS	
		FIELD PARAMETERS	- 16.0
ColorOdor			Temperature16.0oF
	Арр	earance	
Other (specific ion; OVA; HNU; etc.)	Арр	earance	
Other (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cm490	App	earance	
Other (specific ion; OVA; HNU; etc.)	Appoint Appoin	earance	
Other (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cm490	Appending Append	earance	
Other (specific ion; OVA; HNU; etc.) Specific Conductance, 490 Sampling Method and Material P Constituents Sampled	Appoint Appoin	n rope. Description or G&M	Preservative
Other (specific ion; OVA; HNU; etc.) Specific Conductance, 490 Sampling Method and Material P	Appoint Appoin	n rope. Description or G&M	
Other (specific ion; OVA; HNU; etc.) Specific Conductance, 490 Sampling Method and Material P Constituents Sampled	pH 6.26 VC bailer; nylor Container From Lab X 2 x 40 mI	n rope. Description or G&M amber	Preservative HCL, 4°C
Other (specific ion; OVA; HNU; etc.) Specific Conductance, 490 Sampling Method and Material P Constituents Sampled VOCs PNAs PCBs Lead	Appendiction Appen	n rope. Description or G&M amber amber	Preservative HCL, 4°C 4°C
Other (specific ion; OVA; HNU; etc.) Specific Conductance, 490 Sampling Method and Material P Constituents Sampled VOCs PNAs PCBs Lead Remarks	Apperature Apperature	Descriptionamber amber	Preservative HCL, 4°C 4°C 4°C 4°C
Other (specific ion; OVA; HNU; etc.) Specific Conductance, 490 Sampling Method and Material P Constituents Sampled VOCs PNAs PCBs Lead	Apperature Apperature	n rope. Description or G&M amber amber	Preservative HCL, 4°C 4°C 4°C 4°C
Other (specific ion; OVA; HNU; etc.) Specific Conductance, 490 Sampling Method and Material P Constituents Sampled VOCs PNAs PCBs Lead Remarks	Appendiction Appen	Descriptionamber amber	Preservative HCL, 4°C 4°C 4°C 4°C



Project/NoNavistar/BNR/CI0299.001	Page1 of1
Site Location Rock Island, Illinois	
Site/Well No. GM-4 Coded/ Replicate N	o. <u>NA</u> Date <u>11-30-93</u>
Weather Cloudy 30s Time Samp Began	ling 1/20 Time Sampling
EVAC	UATION DATA
Description of Measuring Point (MP) Top of inn	er casing
Height of MP Above/Below Land Surface 2.3	MP Elevation 565.60
Total Sounded Depth of Well Below MP 19.75	Water-Level Elevation 552.69
Held Depth to Water Below MP 12.91	Diameter of Casing2-inch
Wet Water Column in Well6.84	Gallons Pumped/Bailed Prior to Sampling 3.75
Gallons per Foot0.16	
Gallons in Well1.09	Sampling Pump Intake Setting (feet below land surface) NA
Evacuation Method Dedicated bailer	
SAMPLING DATA	A/FIELD PARAMETERS
ColorOdorA	ppearanceTemperature15.2oFC
-	ppearanceTemperature15.2oFC
-	
Other (specific ion; OVA; HNU; etc.)	
Other (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cm 900 pH 6.16 Sampling Method and Material PVC bailer; ny Contain	lon rope. er Description
Other (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cm	lon rope. er Description X_ or G&M Preservative
Other (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cm 900 pH 6.16 Sampling Method and Material PVC bailer; ny Contain Constituents Sampled From Lab	lon rope. er Description X or G&M Preservative mL HCL, 4°C
Other (specific ion; OVA; HNU; etc.) Specific Conductance, 900 pH 6.16 Sampling Method and Material PVC bailer; ny Contain Constituents Sampled From Lab VOCs 2 x 40 PNAs 1-Lite	lon rope. er Description X or G&M Preservative mL HCL, 4°C r, amber 4°C
Other (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cm 900 pH 6.16 Sampling Method and Material PVC bailer; ny Contain Constituents Sampled From Lab VOCs 2 x 40 PNAs 1-Lite PCBs 1-Lite	lon rope. er Description X or G&M Preservative mL HCL, 4°C r, amber 4°C r, amber 4°C
Other (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cm 900 pH 6.16 Sampling Method and Material PVC bailer; ny Contain Constituents Sampled From Lab VOCs 2 x 40 PNAs 1-Lite PCBs 1-Lite	lon rope. er Description X or G&M Preservative mL HCL, 4°C r, amber 4°C
Other (specific ion; OVA; HNU; etc.) Specific Conductance, 900 pH 6.16 Sampling Method and Material PVC bailer; ny Contain Constituents Sampled From Lab PNAs 1-Lite PCBs 1-Lite Lead 750 mL	lon rope. er Description X or G&M Preservative mL HCL, 4°C r, amber 4°C r, amber 4°C
Other (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cm 900 pH 6.16 Sampling Method and Material PVC bailer; ny Contain Constituents Sampled From Lab 1 VOCs 2 x 40 PNAs 1-Lite PCBs 1-Lite PCBs 1-Lite PCBs 1-Lite Aproduct 12.88 Sampling Personnel James P. Auer	lon rope. er Description X or G&M Preservative mL HCL, 4°C r, amber 4°C r, amber 4°C



Project/No. Navistar/BNR/CI0299			Page_1of
Site Location Rock Island, Illin	ois		
Site/Well No. GM-5		GM-0	Date 12-1-94
Weather	Time Sampling Began	1000/0910	Time Sampling Completed
	EVACUATIO		
Description of Measuring Point (MP)T	op of inner ca	sing	· · · · · · · · · · · · · · · · · · ·
Height of MP Above/Below Land Surface	e <u>1.81</u>	MP Elevation56	6.81
Total Sounded Depth of Well Below MP	17.78	Water-Level Elevation	553.17
Held Depth to Water Below I	MP 13.64	Diameter of Casing_	2-inch
Wet Water Column in V	Vell4 • 14	Gallons Pumped/Bai Prior to Sampling	ed 3.00
Gallons per Fo	oot 0.16		
•	Vell0.66	Sampling Pump Inta (feet below land surf	ke Setting ace) <u>NA</u>
Evacuation MethodDedicated ba	iler	•	
		ELD PARAMETERS	Temperature _15.80
ColorOdorOther (specific ion; OVA; HNU; etc.)	Appea	rance	·
ColorOdorOther (specific ion; OVA; HNU; etc.)	Appea	rance	
ColorOdorOther (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cmp	Appea	rance	
ColorOdorOther (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cmp	Appea H 6.62 Dailer; nylon 1	rope.	
ColorOdorOther (specific ion; OVA; HNU; etc.) Specific Conductance,	Appea H 6.62 Dailer; nylon Container Do From Lab X 6	rope. escription or G&M	Preservative
ColorOdor Other (specific ion; OVA; HNU; etc.) Specific Conductance,	Appea H 6.62 Container De From Lab X 6	rope. escription or G&M	Preservative HCL, 4°C
ColorOdor Other (specific ion; OVA; HNU; etc.) Specific Conductance,	Appea H 6.62 Container Do From Lab X 0 2 x 40 mL 1-Liter, an	rope. escription or G&M	Preservative
ColorOdorOther (specific ion; OVA; HNU; etc.) Specific Conductance,	Appea Appea Appea Container Defrom Lab X of the Container Defro	rope. escription or G&M nber	Preservative HCL, 4°C 4°C 4°C
ColorOdorOther (specific ion; OVA; HNU; etc.) Specific Conductance,	Appea H 6.62 Container Do From Lab X 0 2 x 40 mL 1-Liter, an	rope. escription or G&M nber	Preservative HCL, 4°C 4°C
ColorOdorOther (specific ion; OVA; HNU; etc.) Specific Conductance,	Appea H 6.62 Container Do From Lab X 0 2 x 40 mL 1-Liter, an 1-Liter, an 750 mL, pla	rope. escription or G&M nber	Preservative HCL, 4°C 4°C 4°C
ColorOdorOther (specific ion; OVA; HNU; etc.) Specific Conductance,	Appea H 6.62 Container Do From Lab X 0 2 x 40 mL 1-Liter, an 1-Liter, an 750 mL, pla	rope. escription or G&M nber astic	Preservative HCL, 4°C 4°C 4°C

Southprint 89-1473



G&M Form 12 6-86

WATER SAMPLING LOG

Project/No. Navistar/BNR/CI0299.001			Page 1 of 1
Site Location Rock Island, Illino	is		
Site/Well No. GM-6	·		
Weather	Began	0850	Time Sampling Completed
	EVACUATION	ON DATA	
Description of Measuring Point (MP) To	p of inner ca	sing	
Height of MP Above/Below Land Surface			.78
Total Sounded Depth of Well Below MP	17.86	Water-Level Elevation_	551.97
Held Depth to Water Below MR	13.81		2-inch
Wet Water Column in We	H <u>4.05</u>	Gallons Pumped/Baile Prior to Sampling	ed 2.50
Gallons per Foo	ot		
Gallons in We	ıı <u>0.65</u>	Sampling Pump Intake (feet below land surface	
Evacuation Method Dedicated bail	er		
SAM	MPLING DATA/FIE	ELD PARAMETERS	
ColorOdor	Appea	rance	Temperature15.0oF/oC
Other (specific ion; OVA; HNU; etc.)			
Specific Conductance, umhos/cm 380 pH.	6.11		
Sampling Method and Material PVC b			
	Container D		
,	From Lab _x	or G&M	Preservative
VOCs	2x40mL		HCL, 4°C
PNAs	l-Liter,	amber	4°C
PCBs	l-Liter,		4°C
Lead Remarks	750mL, pl	Lastic	4°C
Sampling Personnel			
· ·			
GAL./FT. 1-1/4" = 0.06	WELL CASING 2" = 0.1		4" = 0.65
$\frac{3AL.F1.}{1-1/2''} = 0.00$	$2-\frac{1}{2}$ = 0.2		6" = 1.47

Southprint 89-1473



Project/No. Navistar/BNR/CI029	9.001		Page 1 of 1
Site Location Rock Island, Illin	ois		
Site/Well Na MW-5	Coded/ Replicate No	NA	Date 12-1-94
Weather	Time Sampling Began	1230	Time Sampling Completed
	EVACUATI	ON DATA	
Description of Measuring Point (MP)T	op of inner	casing	
Height of MP Above/Below Land Surface	1.67	MP Elevation570.	67
Total Sounded Depth of Well Below MP	30.33	Water-Level Elevation	552.24
Held Depth to Water Below MF	18.43	Diameter of Casing	2-inch
Wet Water Column in Wel	11.90	Gallons Pumped/Bailed Prior to Sampling	
Gallons per Foo	t		
Gallons in Wel	1.90	Sampling Pump Intake (feet below land surface	
Evacuation MethodDedicated bail	er		
SAN	MPLING DATA/FIE	ELD PARAMETERS	
ColorOdor	Арреа	rance	_Temperature15.4oF/oC
Other (specific ion; OVA; HNU; etc.)			
Specific Conductance, 970 pH	6.51		
Sampling Method and Material PVC b	ailer; nylon	rope.	
	Container D	escription	
Constituents Sampled	From Lab X		Preservative
VOCs	2 x 40 m	L	HCL, 4°C
PNAs	l-Liter		4°C
PCBs	l-Liter		4°C
Lead Remarks	750 mL,	plastic	4°C
Sampling PersonnelJames P. Aue	er		
Company resources			
	WELL CASING		
GAL./FT. $1-\frac{1}{4}$ " = 0.06 $1-\frac{1}{2}$ " = 0.09	$2'' = 0.10$ $2-\frac{1}{2}'' = 0.20$		4" = 0.65 6" = 1.47



Project/No. Navistar/BNR/CI0299.0	01		Page 1 of 1
Site Location _ Rock Island, Illino	is		
Site/Well No	Coded/ Replicate No Time Sampling		Date 12-1-94 Time Sampling
Weather	Began	1130	Completed
	EVACUATION		
Description of Measuring Point (MP) Top	of inner cas	sing	
Height of MP Above/Below Land Surface	2.13	MP Elevation570.1	13
Total Sounded Depth of Well Below MP	25.35	Water-Level Elevation_	553.17
Held Depth to Water Below MF	16.96	Diameter of Casing Gallons Pumped/Baile	2-inch
Wet Water Column in Wel	8.39	Prior to Sampling	1.50
Gallons per Foo	0.16		
Gallons in Wel	1.34	Sampling Pump Intake (feet below land surface	e Setting ce)NA
Evacuation Method Dedicated Bail	er		
SAM	IPLING DATA/FIE	ELD PARAMETERS	
ColorOdor	Appea	rance	TemperatureNAºF/ºC
Other (specific ion; OVA; HNU; etc.)			
Specific Conductance, umhos/cmNApH_			
Sampling Method and Material PVC b.			· · · · · · · · · · · · · · · · · · ·
Constituents Sampled	Container De From Lab <u>x</u>		Preservative
VOCs	2x40mL		HCL, 4°C
PNAs	1-Liter,	amber	4°C
PCBs	l-Liter,	amber	4°C
Remarks 16.93 Product; Well Sampled after well			4°C first well volume;
Sampling Personnel <u>James Auer</u>			
GAL./FT. 1-1/4" = 0.06 1-1/2" = 0.09	WELL CASING 2" = 0.16 2-1/2" = 0.26	6 3 [#] = 0.37	4" = 0.65 6" = 1.47

GBM Form 12 6-96 Southprint 89-1473



	Project/No. Navistar/BNR/CI0299.001		Page1	
Site Location Rock Island, Il	linois			
Site/Well NoMW-8	Coded/ Replicate No.		Date12-1-94	
Weather	Time Sampling		Time Sampling Completed	
	EVACUATI	ON DATA		
Description of Measuring Point (MP)	Top of inner c	asing		
Height of MP Above/Below Land Su	urface 0.48	MP Elevation566	. 28	
Total Sounded Depth of Well Below	MP <u>25.32</u>	Water-Level Elevation_	552.40	
Held Depth to Water Belo	ow MP 13.88	_	2-inch	
Wet Water Column	in Well 11.44	Gallons Pumped/Baile Prior to Sampling	d 6.00	
Gallons pe	er Foot <u>0.16</u>			
Gallons	in Well <u>1.83</u>	Sampling Pump Intak (feet below land surface	e Setting ce) <u>NA</u>	
Evacuation Method Dedicated b	ailer			
ColorOdor	SAMPLING DATA/FIE		Temperature 16.0	
ColorOdorOther (specific ion; OVA; HNU; etc.)	Appea	arance	·	
Other (specific ion; OVA; HNU; etc.) Specific Conductance.	Appea	arance	·	
Other (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cm	Appea	arance		
Other (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cm	Appea	rope escription		
Other (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cm		rope escription	Preservative	
Other (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cm	Appea pH6.78 C bailer: nylon Container D From Labx6 2x40mL	rope escription or G&M	Preservative HCIL, 4°C	
Other (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cm	Appea pH6.78 Container D From Labx 2x40mL 1-Liter,	rope escription or G&M amber	Preservative HCIL, 4°C 4°C	
Other (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cm		rope escription or G&M amber amber	Preservative HCIL, 4°C 4°C 4°C	
Other (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cm	Appea pH6.78 Container D From Labx 2x40mL 1-Liter,	rope escription or G&M amber amber	Preservative HCIL, 4°C 4°C	
Other (specific ion; OVA; HNU; etc.) Specific Conductance,	Appea 	rope escription or G&M amber amber	Preservative HCIL, 4°C 4°C 4°C	
Other (specific ion; OVA; HNU; etc.) Specific Conductance, umhos/cm	Appea 	rope escription or G&M amber amber lastic	Preservative HCIL, 4°C 4°C 4°C	



Project/No. Navistar/BNR/CI0299.0	Page1of_1	
Site Location Rock Island, Illino	is	
Site/Well No. MW-9		NA Date
Weather	Time Sampling Began	Time Sampling NA Completed NA
Description of Manager to Date (MAD). Top	EVACUATION OF TENEN OF	
Description of Measuring Point (MP) 10P	of Inner ca	sing
Height of MP Above/Below Land Surface	2:12	MP Elevation 570.12
Total Sounded Depth of Well Below MP	28.35	Water-Level Elevation 550.15
Held Depth to Water Below MF	22.65	•
Wet Water Column in Wel	I	Gallons Pumped/Bailed Prior to Sampling
Gallons per Foo	t	
Gallons in Wel	I	Sampling Pump Intake Setting (feet below land surface) NA
Evacuation Method Dedicated baile	r	
SAM	IPLING DATA/FIE	ELD PARAMETERS
ColorOdor	Appea	ranceTemperatureºF/ºC
Other (specific ion: OVA: HNIII: etc.)		
Outer (specific fort, OVA, 11140, etc.)		
Specific Conductance, umhos/cmpH_		
Specific Conductance,		
Specific Conductance, umhos/cmpH_ Sampling Method and Material PVC ba	iler; nylon Container D	rope
Specific Conductance, umhos/cmpH_ Sampling Method and Material PVC ba	iler; nylon Container D From Labx	rope escription or G&M Preservative
Specific Conductance, umhos/cmpH_ Sampling Method and Material PVC ba	iler; nylon Container D	rope escription or G&M Preservative HCE, 4°C
Specific Conductance, umhos/cmpH_ Sampling Method and Material PVC ba Constituents Sampled 8 VOCs PNAs	iler; nylon Container D From Labx 2x40mL 1-Liter,	rope escription or G&M Preservative HCE, 4°C amber 4°C
Specific Conductance, umhos/cmpH_ Sampling Method and Material PVC ba Constituents Sampled 8	Container D From LabX 2x40mL 1-Liter, 1-Liter, 750mL, p	rope escription or G&M Preservative HCE, 4°C amber 4°C amber 4°C lastic 4°C
Specific Conductance, umhos/cmpH_ Sampling Method and Material PVC bate Constituents Sampled VOCs PNAs PCBs Lead	Container D From LabX 2x40mL 1-Liter, 1-Liter, 750mL, p	rope escription or G&M Preservative HCE, 4°C amber 4°C amber 4°C lastic 4°C

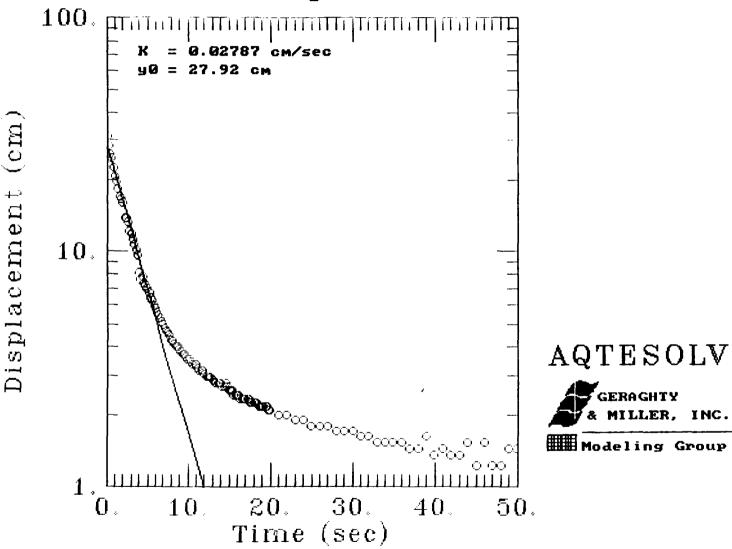
G&M Form 12 6-86 Southprint 89-1473

Appendix F

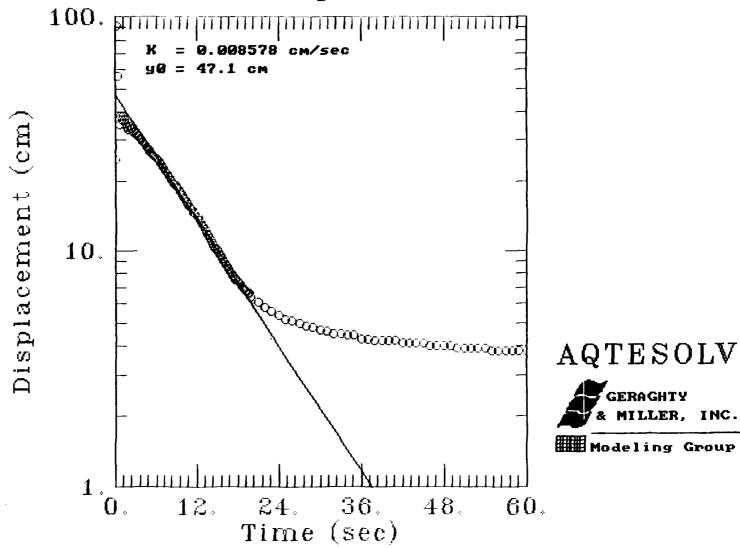
Slug Test Data



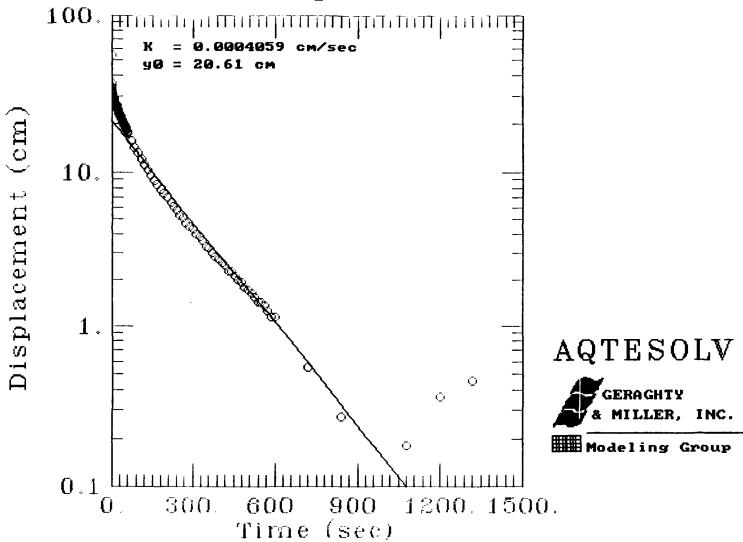
GM-1 Rising Head Test



GM-5 Rising Head Test



GM-6 Rising Head Test



SE1000C		Elapsed Time	Displacement	Elapsed Time	Displacement
Environmental	Logger	(minutes)	(feet)	(minutes)	(feet)
12/22 13:20)	0.09	0.211	0.2433	0.091
		0.0933	0.204	0.2466	0.088
Unit# 00462 1	Test 0	0.0966	0.195	0.25	0.085
		0.1	0.189	0.2533	0.085
Setups:	INPUT 1	0.1033	0.182	0.2566	0.085
Туре	Level (F)	0.1066	0.179	0.26	0.081
Mode	Surface	0.11	0.173	0.2633	0.081
I.D.	GM-1	0.1133	0.167	0.2666	0.081
		0.1166	0.163	0.27	0.081
Reference	0.000	0.12	0.157	0.2733	0.078
Linearity	-0.010	0.1233	0.154	0.2766	0.078
Scale factor	9. 990	0.1266	0.151	0.28	0.078
Offset	0.010	0.13	0.148	0.2833	0.078
Delay mSEC	50.000	0.1333	0.141	0.2866	0.078
		0.1366	0.138	0.29	0.078
Step 1 12/21 1	4:39:20	0.14	0.135	0.2933	0.075
		0.1433	0.132	0.2966	0.075
Elapsed Time	Displacement	0.1466	0.132	0.3	0.075
(minutes)	(feet)	0.15	0.129	0.3033	0.075
0	1.024	0.1533	0.126	0.3066	0.075
0.0033	0.933	0.1566	0.122	0.31	0.072
0.0066	0.854	0.16	0.122	0.3133	0.072
0.01	0.816	0.1633	0.119	0.3166	0.072
0.0133	0.737	0.1666	0.116	0.32	0.072
0.0166	0.681	0.17	0.116	0.3233	0. 07 2
0.02	0.646	0.1733	0.113	0.3266	0. 0 72
0.0233	0.599	0.1766	0.11	0.33	0.069
0.0266	0.551	0.18	0.11	0.3333	0.069
0.03	0.542	0.1833	0.11	0.35	0.066
0.0333	0.52	0.1866	0.107	0.3666	0.066
0.0366	0.447	0.19	0.104	0.3833	0.063
0.04	0.447	0.1933	0.104	0.4	0.063
0.0433	0.432	0.1966	0.104	0.4166	0.059
0.0466	0.397	0.2	0.1	0.4333	0.059
0.05	0.387	0.2033	0.097	0.45	0.059
0.0533	0.368	0.2066	0.097	0.4666	0.056
0.0566	0.35	0.21	0.097	0.4833	0.056
0.06	0.331	0.2133	0.097	0.5	0.056
0.0633	0.315	0.2166	0.094	0.5166	0.053
0.0666	0.268	0.22	0.094	0.5333	0.053
0.07		0.2233	0.091	0.55	0.05
0.0733	0.258	0.2266	0.091	0.5666	0.05
0.0766		0.23	0.091	0.5833	0.05
0.08		0.2333	0.091	0.6	0.05
0.0833		0.2366	0.088	0.6166	0.047
0.0866	0.22	0.24	0.088	0.6333	0.047

Unit# 00462 Test 0 (continued) Step 1 12/21 14:39:20

Elapsed Time	Displacement
(minutes)	(feet)
0.65	0.053
0.6666	0. 0 44
0.6833	0.047
0.7	0.044
0.7166	0.044
0.7333	0.05
0.75	0.04
0.7666	0.05
0.7833	0.04
8.0	0.04
0.8166	0.047
0.8333	0.047
0.85	0.04
0.8666	0.044
0.8833	0.037

		Elapsed Time	Displacement	Elapsed Time	Displacement
SE1000C	;	(minutes)	(feet)	(minutes)	(feet)
12/22 13:4	5	0.08	1.006	0.23	0.892
		0.0833	1.006	0.2333	0.892
Unit# 00462	Test 4	0.0866	0.999	0.2366	0.889
		0.09	0.996	0.24	0.889
Setups:	INPUT 1	0.0933	0.996	0.2433	0.886
Туре	Level (F)	0.0966	0.99	0.2466	0.883
Mode	Surface	0.1	0. 9 87	0.25	0.883
I.D.	GM-6	0.1033	0.987	0.2533	0.879
		0.1066	0.984	0.2566	0.876
		0.11	0.98	0.26	0.876
Reference	0.000	0.1133	0.977	0.2633	0.873
Linearity	-0.010	0.1166	0.974	0.2666	0.873
Scale factor	9. 990	0.12	0.971	0.27	0.87
Offset	0.010	0.1233	0.971	0.2733	0.87
Delay mSEC	50.000	0.1266	0.965	0.2766	0.867
		0.13	0.965	0.28	0.864
Step 0 12/21	16:44:28	0.1333	0.962	0.2833	0.864
		0.1366	0.958	0.2866	0.861
Elapsed Time	Displacement	0.14	0.955	0.29	0.861
(minutes)	(feet)	0.1433	0.952	0.2933	0.857
0	2.633	0.15	0.949	0.3	0.854
0.0033	0.135	0.1533	0.946	0.3033	0.851
0.0066	1.801	0.1566	0.943	0.3066	0.851
0.01	1.179	0.16	0.943	0.31	0.848
0.0133	1.11	0.1633	0.939	0.3133	0.848
0.0166	1.075	0.1666	0.936	0.3166	0.845
0.02	1,103	0.17	0.933	0.32	0.842
0.0233	1.094	0.1733	0.93	0.3233	0.838
0.0266	1.075	0.1766	0.93	0.3266	0.838
0.03	1.066	0.18	0.927	0.33	0.838
0.0333	1.062	0.1833	0.924	0.3333	0.835
0.0366	1.066	0.1866	0.924	0.35	0.826
0.04	1.059	0.19	0.92	0.3666	0.82
0.0433	1.056	0.1933	0.917	0.3833	0.807
0.0466	1.044	0.1966	0.914	0.4	0.801
0.05	1.047	0.2	0.914	0.4166	0.791
0.0533	1.04	0.2033	0.911	0.4333	0.785
0.0566	1.04	0.2066	0.908	0.45	0.775
0.06	1.031	0.21	0.908	0.4666	0.769
0.0633	1.025	0.2133	0.905	0.4833	0.76
0.0666	1.018	0.2166	0.902	0.5	0.753
0.07	1.015	0.22	0.902	0.5166	0.744
0.0733	1.012	0.2233	0.895	0.5333	0.738
0.0766	1.009	0.2266	0.895	0.55	0.731

Unit# 00462 Test 4 (continued) Step 0 12/21 16:44:28

(minutes) (feet) (minutes) (feet) 0.5666 0.725 4.2 0.176 0.5833 0.715 4.4 0.167 0.6 0.709 4.6 0.157 0.6166 0.703 4.8 0.148 0.6333 0.697 5 0.141 0.65 0.69 5.2 0.132 0.6666 0.684 5.4 0.126 0.6833 0.678 5.6 0.119 0.7 0.671 5.8 0.11 0.7166 0.665 6 0.107 0.7333 0.659 6.2 0.1 0.75 0.652 6.4 0.094 0.7666 0.643 6.8 0.085 0.8 0.637 7 0.082 0.8166 0.63 7.2 0.075 0.8533 0.624 7.4 0.075 0.8533 0.624 7.4 0.075 0.85 0.621 7.6	Elapsed Time	Displacement	Elapsed Time	Displacement
0.5833 0.715 4.4 0.167 0.6 0.709 4.6 0.157 0.6166 0.703 4.8 0.148 0.6333 0.697 5 0.141 0.65 0.699 5.2 0.132 0.6666 0.684 5.4 0.126 0.6833 0.678 5.6 0.119 0.7 0.671 5.8 0.11 0.7166 0.665 6 0.107 0.7333 0.659 6.2 0.1 0.75 0.652 6.4 0.094 0.7666 0.646 6.6 0.091 0.7833 0.643 6.8 0.085 0.8 0.637 7 0.082 0.8166 0.63 7.2 0.075 0.8333 0.624 7.4 0.075 0.85 0.621 7.6 0.069 0.8666 0.615 7.8 0.066 0.8833 0.608 8 0.063 0.9 0.605 8.2 0.059 0.946	(minutes)	(feet)	(minutes)	(feet)
0.6 0.709 4.6 0.157 0.6166 0.703 4.8 0.148 0.6333 0.697 5 0.141 0.65 0.69 5.2 0.132 0.6666 0.684 5.4 0.126 0.6833 0.678 5.6 0.119 0.7 0.671 5.8 0.11 0.7166 0.665 6 0.107 0.7333 0.659 6.2 0.1 0.75 0.652 6.4 0.094 0.7666 0.646 6.6 0.091 0.7833 0.643 6.8 0.085 0.8 0.637 7 0.082 0.8166 0.63 7.2 0.075 0.8333 0.624 7.4 0.075 0.855 0.621 7.6 0.069 0.8666 0.615 7.8 0.066 0.8833 0.608 8 0.063 0.9 0.605 8.2 0.059 0.9166 0.599 8.4 0.056 0.933	0.5666	0.725	4.2	0.176
0.6166 0.703 4.8 0.148 0.6333 0.697 5 0.141 0.655 0.69 5.2 0.132 0.6666 0.684 5.4 0.126 0.6833 0.678 5.6 0.119 0.7 0.671 5.8 0.111 0.7166 0.665 6 0.107 0.7333 0.659 6.2 0.1 0.75 0.652 6.4 0.094 0.7666 0.646 6.6 0.091 0.7833 0.643 6.8 0.085 0.8 0.637 7 0.082 0.8166 0.63 7.2 0.075 0.8333 0.624 7.4 0.075 0.85 0.621 7.6 0.069 0.8666 0.615 7.8 0.066 0.8833 0.608 8 0.053 0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.955 0.589 8.8 0.05	0.5833	0.715	4.4	0.167
0.6333 0.697 5 0.141 0.65 0.69 5.2 0.132 0.6666 0.684 5.4 0.126 0.6833 0.678 5.6 0.119 0.7 0.671 5.8 0.11 0.7166 0.665 6 0.107 0.7333 0.659 6.2 0.1 0.75 0.652 6.4 0.094 0.7666 0.646 6.6 0.091 0.7833 0.643 6.8 0.085 0.8 0.637 7 0.082 0.8166 0.63 7.2 0.075 0.8333 0.624 7.4 0.075 0.855 0.621 7.6 0.069 0.8666 0.615 7.8 0.066 0.8833 0.608 8 0.065 0.9 0.605 8.2 0.059 0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.95 0.589 8.8 0.05 0.966	0.6	0.709	4.6	0.157
0.65 0.69 5.2 0.132 0.6666 0.684 5.4 0.126 0.6833 0.678 5.6 0.119 0.7 0.671 5.8 0.11 0.7166 0.665 6 0.107 0.7333 0.659 6.2 0.1 0.75 0.652 6.4 0.094 0.7666 0.646 6.6 0.091 0.7833 0.643 6.8 0.085 0.8 0.637 7 0.082 0.8166 0.63 7.2 0.075 0.8333 0.624 7.4 0.075 0.855 0.621 7.6 0.069 0.8666 0.615 7.8 0.066 0.8833 0.608 8 0.063 0.9 0.605 8.2 0.059 0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.95 0.589 8.8 0.05 0.9833 0.58 9.2 0.047 1 <td>0.6166</td> <td>0.703</td> <td>4.8</td> <td>0.148</td>	0.6166	0.703	4.8	0.148
0.6666 0.684 5.4 0.126 0.6833 0.678 5.6 0.119 0.7 0.671 5.8 0.11 0.7166 0.665 6 0.107 0.7333 0.659 6.2 0.1 0.75 0.652 6.4 0.094 0.7666 0.646 6.6 0.091 0.7833 0.643 6.8 0.085 0.8 0.637 7 0.082 0.8166 0.63 7.2 0.075 0.8333 0.624 7.4 0.075 0.85 0.621 7.6 0.069 0.8666 0.615 7.8 0.066 0.8833 0.608 8 0.063 0.9 0.605 8.2 0.059 0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.955 0.589 8.8 0.05 0.9666 0.583 9 0.047 1 0.574 9.4 0.044 1.2 <td>0.6333</td> <td>0.697</td> <td>5</td> <td>0.141</td>	0.6333	0.697	5	0.141
0.6833 0.678 5.6 0.119 0.7 0.671 5.8 0.11 0.7166 0.665 6 0.107 0.7333 0.659 6.2 0.1 0.75 0.652 6.4 0.094 0.7666 0.646 6.6 0.091 0.7833 0.643 6.8 0.085 0.8 0.637 7 0.082 0.8166 0.63 7.2 0.075 0.8333 0.624 7.4 0.075 0.855 0.621 7.6 0.069 0.8666 0.615 7.8 0.066 0.8833 0.608 8 0.063 0.9 0.605 8.2 0.059 0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.95 0.589 8.8 0.05 0.9666 0.583 9.2 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4	0.65	0.69	5.2	0.132
0.7 0.671 5.8 0.117 0.7166 0.665 6 0.107 0.7333 0.659 6.2 0.1 0.75 0.652 6.4 0.094 0.7666 0.646 6.6 0.091 0.7833 0.643 6.8 0.085 0.8 0.637 7 0.082 0.8166 0.63 7.2 0.075 0.8333 0.624 7.4 0.075 0.855 0.621 7.6 0.069 0.8666 0.615 7.8 0.066 0.8833 0.608 8 0.063 0.9 0.605 8.2 0.059 0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.95 0.589 8.8 0.05 0.9666 0.583 9 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.6	0.6666	0.684	5.4	0.126
0.7166 0.665 6 0.107 0.7333 0.659 6.2 0.1 0.75 0.652 6.4 0.094 0.7666 0.646 6.6 0.091 0.7833 0.643 6.8 0.085 0.8 0.637 7 0.082 0.8166 0.63 7.2 0.075 0.8333 0.624 7.4 0.075 0.85 0.621 7.6 0.069 0.8666 0.615 7.8 0.066 0.8833 0.608 8 0.063 0.9 0.605 8.2 0.059 0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.95 0.589 8.8 0.05 0.9666 0.583 9 0.047 0.9833 0.58 9.2 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.8	0.6833	0.678	5.6	0.119
0.7333 0.659 6.2 0.1 0.75 0.652 6.4 0.094 0.7666 0.646 6.6 0.091 0.7833 0.643 6.8 0.085 0.8 0.637 7 0.082 0.8166 0.63 7.2 0.075 0.8333 0.624 7.4 0.075 0.85 0.621 7.6 0.069 0.8666 0.615 7.8 0.066 0.8833 0.608 8 0.063 0.9 0.605 8.2 0.059 0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.95 0.589 8.8 0.05 0.9666 0.583 9 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.8 0.397 12 0.018 2 0.365 14 0.09 2.2	0.7	0.671	5.8	0.11
0.75 0.652 6.4 0.094 0.7666 0.646 6.6 0.091 0.7833 0.643 6.8 0.085 0.8 0.637 7 0.082 0.8166 0.63 7.2 0.075 0.8333 0.624 7.4 0.075 0.85 0.621 7.6 0.069 0.8666 0.615 7.8 0.066 0.8833 0.608 8 0.063 0.9 0.605 8.2 0.059 0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.95 0.589 8.8 0.05 0.9666 0.583 9 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.8 0.397 12 0.018 2 0.365 14 0.009 2.2 0.34 16 0 2.6 0.293<	0.7166	0.665	6	0.107
0.7666 0.646 6.6 0.091 0.7833 0.643 6.8 0.085 0.8 0.637 7 0.082 0.8166 0.63 7.2 0.075 0.8333 0.624 7.4 0.075 0.85 0.621 7.6 0.069 0.8666 0.615 7.8 0.066 0.8833 0.608 8 0.063 0.9 0.605 8.2 0.059 0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.95 0.589 8.8 0.05 0.9666 0.583 9 0.047 1 0.574 9.4 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.6 0.432 10 0.037 1.8 0.397 12 0.018 2.0 0.365 14 0.009 2.2 0.	0.7333	0.659	6.2	0.1
0.7833 0.643 6.8 0.085 0.8 0.637 7 0.082 0.8166 0.63 7.2 0.075 0.8333 0.624 7.4 0.075 0.85 0.621 7.6 0.069 0.8666 0.615 7.8 0.066 0.8833 0.608 8 0.063 0.9 0.605 8.2 0.059 0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.95 0.589 8.8 0.05 0.9666 0.583 9 0.047 0.9833 0.58 9.2 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.6 0.432 10 0.037 1.8 0.397 12 0.018 2.2 0.34 16 0 2.4 0.315 18 0.006 2.8 0.274 </td <td>0.75</td> <td>0.652</td> <td>6.4</td> <td>0.094</td>	0.75	0.652	6.4	0.094
0.8 0.637 7 0.082 0.8166 0.63 7.2 0.075 0.8333 0.624 7.4 0.075 0.85 0.621 7.6 0.069 0.8666 0.615 7.8 0.066 0.8833 0.608 8 0.063 0.9 0.605 8.2 0.059 0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.95 0.589 8.8 0.05 0.9666 0.583 9 0.047 0.9833 0.58 9.2 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.6 0.432 10 0.037 1.8 0.397 12 0.018 2.2 0.34 16 0 2.4 0.315 18 0.006 2.8 0.274 22 0.015 3 0.255	0.7666	0.646	6. 6	0.091
0.8166 0.63 7.2 0.075 0.8333 0.624 7.4 0.075 0.85 0.621 7.6 0.069 0.8666 0.615 7.8 0.066 0.8833 0.608 8 0.063 0.9 0.605 8.2 0.059 0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.95 0.589 8.8 0.05 0.9666 0.583 9 0.047 0.9833 0.58 9.2 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.6 0.432 10 0.037 1.8 0.397 12 0.018 2 0.365 14 0.009 2.2 0.34 16 0 2.4 0.315 18 0.006 2.8 0.274 22 0.015 3 0.255	0.7833	0.643	6.8	0.085
0.8333 0.624 7.4 0.075 0.85 0.621 7.6 0.069 0.8666 0.615 7.8 0.066 0.8833 0.608 8 0.063 0.9 0.605 8.2 0.059 0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.95 0.589 8.8 0.05 0.9666 0.583 9 0.047 0.9833 0.58 9.2 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.6 0.432 10 0.037 1.8 0.397 12 0.018 2 0.365 14 0.009 2.2 0.34 16 0 2.4 0.315 18 0.006 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0.227	0.8	0.637	7	0.082
0.85 0.621 7.6 0.069 0.8666 0.615 7.8 0.066 0.8833 0.608 8 0.063 0.9 0.605 8.2 0.059 0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.95 0.589 8.8 0.05 0.9666 0.583 9 0.047 0.9833 0.58 9.2 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.6 0.432 10 0.037 1.8 0.397 12 0.018 2 0.365 14 0.009 2.2 0.34 16 0 2.4 0.315 18 0.006 2.6 0.293 20 0.012 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0	0.8166	0.63	7.2	0.075
0.8666 0.615 7.8 0.066 0.8833 0.608 8 0.063 0.9 0.605 8.2 0.059 0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.95 0.589 8.8 0.05 0.9666 0.583 9 0.047 0.9833 0.58 9.2 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.6 0.432 10 0.037 1.8 0.397 12 0.018 2 0.365 14 0.009 2.2 0.34 16 0 2.4 0.315 18 0.006 2.6 0.293 20 0.012 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198	0.8333	0.624	7.4	0.075
0.8833 0.608 8 0.063 0.9 0.605 8.2 0.059 0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.95 0.589 8.8 0.05 0.9666 0.583 9 0.047 0.9833 0.58 9.2 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.6 0.432 10 0.037 1.8 0.397 12 0.018 2 0.365 14 0.009 2.2 0.34 16 0 2.4 0.315 18 0.006 2.6 0.293 20 0.012 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198	0.85	0.621	7.6	0.069
0.9 0.605 8.2 0.059 0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.95 0.589 8.8 0.05 0.9666 0.583 9 0.047 0.9833 0.58 9.2 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.6 0.432 10 0.037 1.8 0.397 12 0.018 2 0.365 14 0.009 2.2 0.34 16 0 2.4 0.315 18 0.006 2.6 0.293 20 0.012 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198	0.8666	0.615	7.8	0.066
0.9166 0.599 8.4 0.056 0.9333 0.596 8.6 0.053 0.95 0.589 8.8 0.05 0.9666 0.583 9 0.047 0.9833 0.58 9.2 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.6 0.432 10 0.037 1.8 0.397 12 0.018 2 0.365 14 0.009 2.2 0.34 16 0 2.4 0.315 18 0.006 2.6 0.293 20 0.012 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198	0.8833	0.608	8	0.063
0.9333 0.596 8.6 0.053 0.95 0.589 8.8 0.05 0.9666 0.583 9 0.047 0.9833 0.58 9.2 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.6 0.432 10 0.037 1.8 0.397 12 0.018 2 0.365 14 0.009 2.2 0.34 16 0 2.4 0.315 18 0.006 2.6 0.293 20 0.012 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198	0.9	0.605	8.2	0.059
0.95 0.589 8.8 0.05 0.9666 0.583 9 0.047 0.9833 0.58 9.2 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.6 0.432 10 0.037 1.8 0.397 12 0.018 2 0.365 14 0.009 2.2 0.34 16 0 2.4 0.315 18 0.006 2.6 0.293 20 0.012 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198 0.198	0.9166	0.599	8.4	0.056
0.9666 0.583 9 0.047 0.9833 0.58 9.2 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.6 0.432 10 0.037 1.8 0.397 12 0.018 2 0.365 14 0.009 2.2 0.34 16 0 2.4 0.315 18 0.006 2.6 0.293 20 0.012 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198	0.9333	0.596	8.6	0.053
0.9833 0.58 9.2 0.047 1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.6 0.432 10 0.037 1.8 0.397 12 0.018 2 0.365 14 0.009 2.2 0.34 16 0 2.4 0.315 18 0.006 2.6 0.293 20 0.012 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198	0.95	0.589	8.8	0.05
1 0.574 9.4 0.044 1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.6 0.432 10 0.037 1.8 0.397 12 0.018 2 0.365 14 0.009 2.2 0.34 16 0 2.4 0.315 18 0.006 2.6 0.293 20 0.012 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198	0.9666	0.583	9	0.047
1.2 0.514 9.6 0.041 1.4 0.469 9.8 0.037 1.6 0.432 10 0.037 1.8 0.397 12 0.018 2 0.365 14 0.009 2.2 0.34 16 0 2.4 0.315 18 0.006 2.6 0.293 20 0.012 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198	0.9833	0.58	9.2	0.047
1.4 0.469 9.8 0.037 1.6 0.432 10 0.037 1.8 0.397 12 0.018 2 0.365 14 0.009 2.2 0.34 16 0 2.4 0.315 18 0.006 2.6 0.293 20 0.012 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198	1	0.574	9.4	0.044
1.6 0.432 10 0.037 1.8 0.397 12 0.018 2 0.365 14 0.009 2.2 0.34 16 0 2.4 0.315 18 0.006 2.6 0.293 20 0.012 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198	1.2	0.514	9.6	0.041
1.8 0.397 12 0.018 2 0.365 14 0.009 2.2 0.34 16 0 2.4 0.315 18 0.006 2.6 0.293 20 0.012 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198	1.4	0.469	9.8	0.037
2 0.365 14 0.009 2.2 0.34 16 0 2.4 0.315 18 0.006 2.6 0.293 20 0.012 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198	1.6	0.432	10	0.037
2.2 0.34 16 0 2.4 0.315 18 0.006 2.6 0.293 20 0.012 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198	1.8	0.397	12	0.018
2.4 0.315 18 0.006 2.6 0.293 20 0.012 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198	2	0.365	14	0.009
2.6 0.293 20 0.012 2.8 0.274 22 0.015 3 0.255 3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198	2.2	0.34	16	0
2.8	2.4	0.315	18	0.006
3 0.255 3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198	2.6	0.293	20	0.012
3.2 0.239 3.4 0.227 3.6 0.211 3.8 0.198	2.8	0.274	22	0.015
3.4 0.227 3.6 0.211 3.8 0.198	3	0.255		
3.6 0.211 3.8 0.198	3.2	0.239		
3.8 0.198	3.4	0.227		
	3.6	0.211		
4 0.189	3.8	0.198		
7 4.100	4	0.189		

SE1000C		Elapsed Time	Displacement	Elapsed Time	Displacement
Environmenta	l Logger	(minutes)	(feet)	(minutes)	(feet)
12/22 13:54	,	0.09	0.864	0.2433	0.343
		0.0933	0.848	0.2466	0.337
Unit# 00462	Test 5	0.0966	0.835	0.25	0.331
		0.1	0.823	0.2533	0.321
Setups:	INPUT 1	0.1033	0.807	0.2566	0.315
Туре	Level (F)	0.1066	0.794	0.26	0.309
Mode	Surface	0.11	0.779	0.2633	0.302
I.D.	GM-5	0.1133	0.766	0.2666	0.296
		0.1166	0.753	0.27	0.29
Reference	0.000	0.12	0.738	0.2733	0.283
Linearity	-0.010	0.1233	0.725	0.2766	0.28
Scale factor	9.990	0.1266	0.712	0.28	0.274
Offset	0.010	0.13	0.7	0.2833	0.268
Delay mSEC	50.000	0.1333	0.687	0.2866	0.264
•		0.1366	0.674	0.29	0.258
Step 1 12/21 1	7:35:42	0.14	0.662	0.2933	0.255
•		0.1433	0.649	0.2966	0.249
Elapsed Time	Displacement	0.1466	0.637	0.3	0.246
(minutes)	(feet)	0.15	0.627	0.3033	0.242
Ò	0.807		0.615	0.3066	0.239
0.0033	2.987	0.1566	0.602	0.31	0.233
0.0066	1.864	0.16	0.589	0.3133	0.23
0.01	1.157	0.1633	0.58	0.3166	0.227
0.0133	1.252	0.1666	0.567	0.32	0.223
0.0166	1.211	0.17	0.555	0.3233	0.22
0.02	1.252	0.1733	0.545	0.3266	0.217
0.0233	1.214	0.1766	0.533	0.33	0.217
0.0266	1.163	0.18	0.523	0.3333	0.211
0.03	1.129	0.1833	0.51	0.35	0.201
0.0333	1.097	0.1866	0.501	0.3666	0.189
0.0366	1.132	0.19	0.492	0.3833	0.182
0.04	1.113	0.1933	0.479	0.4	0.176
0.0433	1.103	0.1966	0.469	0.4166	0.17
0.0466	1.066	0.2	0.46	0.4333	0.167
0.05	1.047	0.2033	0.451	0.45	0.164
0.0533	1.028	0.2066	0.441	0.4666	0.16
0.0566	1.028	0.21	0.432	0.4833	0.157
0.06	0.999	0.2133	0.422	0.5	0.154
0.0633	0.987	0.2166	0.413	0.5166	0.151
0.0666	0.962	0.22	0.403	0.5333	0.148
0.07	0.955	0.2233	0.394	0.55	0.148
0.0733	0.936	0.2266	0.384	0.5666	0.145
0.0766	0.921	0.23	0.378	0.5833	0.145
0.08	0.908	0.2333	0.369	0.6	0.141
0.0833	0.892	0.2366	0.359	0.6166	0.141
0.0866	0.876	0.24	0.353	0.6333	0.138
0.000	J.J. J	Ţ. _ ,	7.730	2,2230	

Unit# 00462 Test 5 (continued) Step 1 12/21 17:35:42

Elapsed Time	Displacement	Elapsed Time	Displacement
(minutes)	(feet)	(minutes)	(feet)
0.65	0.138	5.4	0.091
0.6666	0.138	5. 6	0.088
0.6833	0.138	5.8	0.088
0.7	0.135	6	0.088
0.7166	0.135	6.2	0.088
0.7333	0.135	6.4	0.088
0.75	0.135	6.6	0.085
0.7666	0.132	6.8	0.085
0.7833	0.132	7	0.085
8.0	0.132	7.2	0.085
0.8166	0.132	7.4	0.085
0.8333	0.129	7.6	0.085
0.85	0.129	7.8	0.085
0.8666	0.129	8	0.082
0.8833	0.129	8.2	0.082
0.9	0.129	8.4	0.082
0.9166	0.126	8.6	0.082
0.9333	0.126	8.8	0.082
0.95	0.126	9	0.082
0.9666	0.126	9.2	0.082
0.9833	0.126	9.4	0.082
1	0.126	9.6	0.078
1.2	0.119	9.8	0.078
1.4	0.116	10	0.078
1.6	0.113	12	0. 07 8
1.8	0.11	14	0.072
2	0.107		
2.2	0.107		
2.4	0.104		
2.6	0.104		
2.8	0.1		
3	0.1		
3.2	0.097		
3.4	0.097		
3.6	0.094		
3.8	0.094		
4	0.094		
4.2	0.094		
4.4	0.094		
4.6	0.091		
4.8	0.091		
5	0.091		
5.2	0.088		

Appendix G **Groundwater Analytical Results**



SIGNATURE PAGE

Reviewed by:

ATI Project Manager

Client:

GERAGHTY & MILLER

CHICAGO, ILLINOIS

Project Name:

NAVISTAR-BNR CI0299.002

Project Number:

Project Location: ROCK ISLAND

Accession Number: 312071

Project Manager: JAMES AUER

Sampled By:

J. AUER/J. IHRIG

Analysis Report

Analysis: VOLATILES (8240)

Accession: Client:

Project Number: Project Name: Project Location: Department:

312041

GERAGHTY & MILLER CI0299.002 NAVISTAR-BNR ROCK ISLAND ORGANIC/MS

[0] Page 1 Date 10-Dec-93

312041 Accession:

Client:

GERAGHTY & MILLER C10299.002 Project Number: Project Name: NAVISTAR-BNR Project Location: ROCK ISLAND Test:

VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Analysis Method:

Extraction Method: N/A Matrix: LÍQUID QC Level: I

001 Sample Date/Time: 30-NOV-93 1640 Lab Id: Client Sample Id: GM-1 Received Date: 01-DEC-93

Batch: VIW158 Extraction Date: N/A

Blank: C Dry Weight %: N/A Analysis Date: 07-DEC-93

Parameter:	Units:	Results:	Rpt Lmts: Q:	
ACETONE	UG/L	17	10	
ACROLEIN	UG/L	ND	100	
ACRYLONITRILE	UG/L	ND	100	
BENZENE	UG/L	ND	1	
BROMODICHLOROMETHANE	UG/L	ND	1	
BROMOFORM	UG/L	ND	2	
BROMOMETHANE	UG/L	ND	ī	
2-BUTANONE (MEK)	UG/L	ND	3	
CARBON DISULFIDÉ	UG/L	ND	1 1 2 1 3 1	
	UG/L	ND	2	
	UG/L	ND	ī	
CHLOROETHANE	UG/L	ND	1	
	UG/L	ND	5	
CHLOROFORM	UG/L	ND	2	
	UG'/L	ND	2	
CHLORODIBROMOMETHANE	UG/L	ND	5	
DIPPOMOMETURNE	UG/L	ND	5	
DICHLORODIFLUOROMETHANE	UG/L	ND	5	
	UG/L	ND	2115225551215515353322	
1,2-DICHLOROETHANE	UG/L	ND	2	
1,1-DICHLOROETHENE	UG/L	ND	1	
TOTAL 1,2-DICHLOROETHYLENE	UG/L	ND	5	
1.2-DICHLOROPROPANE	UG/L	ND	2	
CIS-1,3-DICHLOROPROPENE	UG/L	ND	ī	
TRANS-1, 3-DICHLOROPROPENE	UG/L	ND	1	
	UG/L	ND	5	
		ND	1	
ETHYL METHACRYLATE	UG/L	ND	5	
	UG/L	ND	3	
IODOMETHANE	UG/L	ND	5	
METHYLENE CHLORIDE	UG/L	ND	3	
4-METHYL-2-PENTANONE	UG/L	ND	3	
		ND	2	
1,1,2,2-TETRACHLOROETHANE	UG/L	ND	2	
TETRACHLOROETHENE	UG/L	ND	1	
		ND	5	
1,1,1-TRICHLOROETHANE	UG/L	ND	1 5 5 2	
		ND	2	
	UG/L	ND	1	
		ND	1	

[0] Page 2 Date 10-Dec-93

Accession: 312041

Client: GERAGHTY & MILLER

Project Number: CI0299.002
Project Name: NAVISTAR-BNR
Project Location: ROCK ISLAND
Test: VOLATILES (8240

Test: VOLATILES (8240)
Analysis Method: 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992.

Extraction Method: N/A
Matrix: LIQUID
QC Level: I

Lab Id: 001 Sample Date/Time: 30-NOV-93 1640 Client Sample Id: GM-1 Received Date: 01-DEC-93

Parameter:	Units:	Results:	Rpt Lmts:	Q:
1,2,3 TRICHLOROPROPANE VINYL ACETATE VINYL CHLORIDE TOTAL XYLENES BROMOFLUOROBENZENE 1,2-DICHLOROETHANE-D4 TOLUENE-D8 ANALYST	UG/L UG/L UG/L UG/L UG/L %REC/SURR %REC/SURR %REC/SURR INITIALS	ND ND ND 168* 104 87* LP	5 2 1 2 86-115 76-114 88-115	
MADISI	INTITALS	D.F.		

^{*} SURROGATE RECOVERY OUTSIDE ACCEPTANCE LIMITS DUE TO MATRIX INTERFERENCE.

[0] Page 3 Date 10-Dec-93

Accession: 312041

GERAGHTY & MILLER Client:

Project Number: CI0299.002 Project Name: NAVISTAR-BNR Project Location:

Test:

ROCK ISLAND VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Analysis Method:

Extraction Method: N/A Matrix: LIQUID QC Level: I

Lab Id: Client Sample Id: Sample Date/Time: 002 30-NOV-93 1600 Received Date: 01-DEC-93 GM-2

Extraction Date:

Batch: VIW158 Blank: C N/A 07-DEC-93 Dry Weight %: N/A Analysis Date:

Parameter:	Units:	Results:	Rpt Lmts: Q:
ACETONE	UG/L	ND	10
ACROLEIN	UG'/L	ND	100
ACRYLONITRILE	UG/L	ND	100
BENZENE	UG/L	ND	1
BROMODICHLOROMETHANE	UG/L	ND	1
BROMOFORM	UG/L	ND	2
BROMOMETHANE	UG'/L	ND	1
2-BUTANONE (MEK)	UG/L	ND	3
CARBON DISULFIDÉ	UG'/L	ND	1
CARBON TETRACHLORIDE	UG/L	ND	2
CHLOROBENZENE	UG/L	ND	1
CHLOROETHANE	UG/L	ND	1
2-CHLOROETHYLVINYL ETHER	UG/L	ND	5
CHLOROFORM	UG/L	ND	2
CHLOROMETHANE	UG/L	ND	2
CHLOROD I BROMOMETHANE	UG/L	ND	5
DIBROMOMETHANE	UG'/L	ND	5
DICHLORODIFLUOROMETHANE	UG'/L	ND	1 1 2 1 3 1 2 1 5 2 2 5 5 5 1 5 1 5 3 5 3 3 3 2 2 2 2 2
1,1-DICHLOROETHANE	UG/L	ND	1
1,2-DICHLOROETHANE	UG/L	ND	2
1,1-DICHLOROETHENE	UG/L	ND	1
TOTAL 1,2-DICHLOROETHYLENE	UG/L	ND	5
1,2-DICHLOROPROPANE	UG/L	ND	2
CIS-1,3-DICHLOROPROPENE	UG/L	ND	1
TRANS-1,3-DICHLOROPROPENE	UG/L	ND	1
1,4-DICHLORO-2-BUTENE	UG/L	ND	5
ETHYL BENZENE	UG/L	ND	1
ETHYL METHACRYLATE	UG/L	ND	5
2-HEXANONE	UG/L	ND	3
IODOMETHANE	UG/L	ND	5
METHYLENE CHLORIDE	UG/L	ND	3
4-METHYL-2-PENTANONE	UG/L	ND	3
STYRENE	UG/L	ND	2
1,1,2,2-TETRACHLOROETHANE	UG'/L	ND	2
TETRACHLOROETHENE	UG'/L	ND	1
TOLUENE	UG/L	ND	5
1,1,1-TRICHLOROETHANE	UG/L	ND	1 5 5 2
1,1,2-TRICHLOROETHANE	UG/L	ND	2
TRICHLOROETHENE	UG/L	ND	1
TRICHLOROFLUOROMETHANE	UG/L	ND	1
	<i>,</i> –		

[0) Page 4
Date 10-Dec-93

Accession: 312041

GERAGHTY & MILLER Client:

Project Number: Project Name: CI0299.002 NAVISTAR-BNR Project Location: ROCK ISLAND

Test:

VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Analysis Method:

Extraction Method: N/A LÍQUID Matrix: QC Level:

Lab Id: Client Sample Id:	002 GM-2		Sample Dar Received			OV-93	1600
Parameter:		Units:	Results:	Rpt Lm	ts:	Q:	
1,2,3 TRICHLOROPRO VINYL ACETATE VINYL CHLORIDE TOTAL XYLENES BROMOFLUOROBENZENE 1,2-DICHLOROETHANE		UG/L UG/L UG/L UG/L %REC/SURR %REC/SURR	ND ND ND ND 102 96	5 2 1 2 86-115 76-114			

%REC/SURR INITIALS

99

LP

88-115

Comments:

TOLUENE-D8

ANALYST

[0) Page 5 Date 10-Dec-93 312041 Accession: GERAGHTY & MILLER Client: Project Number: CI0299.002 Project Name: NAVISTAR-BNR Project Location: ROCK ISLAND Test: VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Analysis Method: Extraction Method: N/A LIQUID Matrix: QC Level: I 003 Sample Date/Time: 30-NOV-93 1500 Lab Id: Client Sample Id: GM-3 Received Date: 01-DEC-93 Batch: VIW158 Extraction Date: N/A Blank: C Dry Weight %: N/A Analysis Date: 07-DEC-93 Units: Results: Rpt Lmts: Parameter: Q: **ACETONE** UG/L 14 10 ACROLEIN UG/L ND 100 UG/L 100 ACRYLONITRILE ND BENZENE UG/L ND 1 BROMODICHLOROMETHANE UG/L ND 1 2 BROMOFORM UG/L ND **BROMOMETHANE** UG/L ND UG/L 3 2-BUTANONE (MEK) ND CARBON DISULFIDÉ UG/L ND CARBON TETRACHLORIDE UG/L ND CHLOROBENZENE UG/L ND **CHLOROETHANE** UG/L ND UG/L 5 2 2 5 5 2-CHLOROETHYLVINYL ETHER ND CHLOROFORM UG/L ND CHLOROMETHANE UG/L ND UG/L **CHLORODIBROMOMETHANE** ND UG/L **DIBROMOMETHANE** ND UG/L 5 **DICHLORODIFLUOROMETHANE** ND 1,1-DICHLOROETHANE 1 2 UG/L ND UG/L 1,2-DICHLOROETHANE ND 1,1-DICHLOROETHENE UG/L ND 5 2 TOTAL 1,2-DICHLOROETHYLENE UG/L ND 1,2-DICHLOROPROPANE UG/L ND 1 CIS-1,3-DICHLOROPROPENE UG/L ND TRANS-1, 3-DICHLOROPROPENE UG/L ND 1,4-DICHLORO-2-BUTENE UG/L ND 5 ETHYL BENZENE 1 UG/L ND UG/L ETHYL METHACRYLATE ND UG/L 2-HEXANONE ND UG/L **IODOMETHANE** ND METHYLENE CHLORIDE UG/L ND 4-METHYL-2-PENTANONE UG/L ND 322155 STYRENE UG/L ND 1,1,2,2-TETRACHLOROETHANE UG/L ND TETRACHLOROETHENE UG/L ND

UG/L

UG/L

UG/L

UG/L

UG/L

ND

ND

ND

ND

ND

2

TOLUENE

1,1,1-TRICHLOROETHANE

1,1,2-TRICHLOROETHANE

TRICHLOROFLUOROMETHANE

TRICHLOROETHENE

[0] Page 6 Date 10-Dec-93

Accession: 312041

GERAGHTY & MILLER Client:

Project Number: CI0299.002 Project Name: NAVISTAR-BNR Project Location: ROCK ISLAND

Test:

VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Analysis Method:

Extraction Method: N/A Matrix: LIQUID

QC Level:

go bever.	-						
Lab Id: Client Sample Id:	OO3 Sample Date/Time: GM-3 Received Date:			NOV-93 1	1500		
Parameter:		Units:	Results:	Rpt Lm	ts:	Q:	
1,2,3 TRICHLOROPRO	PANE	UG/L	ND	5			
VÍNÝL ACETATE		UG/L	ND	2			
VINYL CHLORIDE		UG/L	ND	1			
TOTAL XYLENES		UG/L	ND	2			
BROMOFLUOROBENZENI	E	%REC/SURR	105	86-115			
1,2-DICHLOROETHANI	E-D4	%REC/SURR	102	76-114			
TOLUENE-D8		%REC/SURR	103	88-115			
ANALYST		INITÍALS	LP				

[0) Page 7 Date 10-Dec-93

Accession: 312041

Client: GERAGHTY & MILLER

Project Number: Project Name: CI0299.002 NAVISTAR-BNR Project Location: ROCK ISLAND Test:

VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Analysis Method:

Extraction Method: N/A LIQUID Matrix: QC Level: Ι

Lab Id: 004 Sample Date/Time: 30-NOV-93 1420 Client Sample Id: GM-4Received Date: 01-DEC-93

Extraction Date: Batch: VIW158 N/A

Blank: C Dry Weight %: N/A 07-DEC-93 Analysis Date:

Parameter:	Units:	Results:	Rpt Lmts: Q:
ACETONE	UG/L	13	10
ACROLEIN	UG/L	ND	100
ACRYLONITRILE	UG/L	ND	100
BENZENE	UG/L	ND	1
BROMODICHLOROMETHANE	UG/L	ND	
	UG/L	ND	2
BROMOMETHANE	ÜG/L	ND	<u>ī</u>
2-BUTANONE (MEK)	UG/L	ND	3
BROMOFORM BROMOMETHANE 2-BUTANONE (MEK) CARBON DISULFIDE	UG/L	ND	1 2 1 3 1 2
CARBON TETRACHLORIDE CHLOROBENZENE	UG/L	ND	$\bar{2}$
CHLOROBENZENE	UG/L	ND	ī
CHLOROETHANE	UG/L	ND	
2-CHLOROETHYLVINYL ETHER	UG/L	ND	5
CHLOROFORM	UG/L	ND	2
CHLOROMETHANE	UG/L	ND	$\overline{2}$
CHLORODIBROMOMETHANE	UG/L	ND	5
	UG/L	ND	5
DICHLORODIFLUOROMETHANE	UG/L	ND	5
DICHLORODIFLUOROMETHANE 1,1-DICHLOROETHANE 1,2-DICHLOROETHANE	UG/L	ND	1 5 2 2 5 5 5 1 2 1 5 2 1
1,2-DICHLOROETHANE	UG/L	ND	2
1,1-DICHLOROETHENE	UG/L	ND	1
TOTAL 1,2-DICHLOROETHYLENE	UG'/L	ND	5
	UG/L	ND	2
CIS-1,3-DICHLOROPROPENE	UG'/L	ND	ī
TRANS-1,3-DICHLOROPROPENE	UG/L	ND	1
1,4-DICHLORO-2-BUTENE	UG/L	ND	5
ETHYL BENZENE	UG/L	ND	1
1,2-DICHLOROPROPANE CIS-1,3-DICHLOROPROPENE TRANS-1,3-DICHLOROPROPENE 1,4-DICHLORO-2-BUTENE ETHYL BENZENE ETHYL METHACRYLATE 2-HEXANONE IODOMETHANE	UG/L	ND	5
2-HEXANONE	UG/L	ND	3
IODOMETHANE	UG/L	ND	5
METHYLENE CHLORIDE	UG/L	ND	3
4-methyl-2-pentanone	UG/L	ND	3
STYRENE	UG/L	ND	2
1,1,2,2-TETRACHLOROETHANE	UG/L	ND	2
TETRACHLOROETHENE	UG/L	ND	1
TOLUENE	UG/L	ND	5 1 5 3 5 3 2 2 1 5 5 2
1,1,1-TRICHLOROETHANE	UG/L	ND	5
1,1,2-TRICHLOROETHANE	UG/L	ND	2
TRICHLOROETHENE	UG/L	ND	
TRICHLOROFLUOROMETHANE	UG/L	ND	1

[0) Page 8 Date 10-Dec-93

312041 Accession:

Accession: Client: Project Number: Project Name: Project Location: Test: Analysis Method: Extraction Method: Matrix: QC Level:			eptember 198	6 and Rev.	1, July 1992.
Lab Id: Client Sample Id:	004 GM-4		Sample Date/Time: 30-NOV-93 1 Received Date: 01-DEC-93		30-NOV-93 1420 01-DEC-93
Parameter:		Units:	Results:	Rpt Lmts	3: Q:
1,2,3 TRICHLOROPRODUINYL ACETATE VINYL CHLORIDE TOTAL XYLENES BROMOFLUOROBENZENE 1,2-DICHLOROETHANE TOLUENE-D8 ANALYST		UG/L UG/L UG/L UG/L \$REC/SURR \$REC/SURR \$REC/SURR \$NEC/SURR INITIALS	ND ND ND 111 106 100 LP	5 2 1 2 86-115 76-114 88-115	

[0] Page 9 Date 10-Dec-93

"Method Report Summary"

Accession Number: 312041

Client: GERAGHTY & MILLER

Project Number: CI0299.002
Project Name: NAVISTAR-BNR
Project Location: ROCK ISLAND
Test: VOLATILES (8240)

Client Sample Id:	Parameter:	Unit:	Result:
GM-1	ACETONE	UG/L	17
GM-3	ACETONE	UG/L	14
GM-4	ACETONE	UG/L	13

SIGNATURE PAGE

Reviewed by:

ATI Project Manager

Client:

GERAGHTY & MILLER

CHICAGO, ILLINOIS

Project Name:

NAVISTAR-BNR Project Number: CI0299.002

Project Location: ROCK ISLAND

Accession Number: 312041

Project Manager:

JAMES AUER

Sampled By:

J. AUER/J. IHRIG

Analysis Report

Analysis: Group of Single Metals

Accession:
Client:
Project Number:
Project Name:
Project Location:
Department:

312041 GERAGHTY & MILLER CI0299.002 NAVISTAR-BNR ROCK ISLAND METALS

[0] Page 1 Date 10-Dec-93

Accession:

312041

Client:

GERAGHTY & MILLER CI0299.002

Project Number: Project Name: NAVISTAR-BNI Project Location: ROCK ISLAND Test: Group of Sir

NAVISTAR-BNR

Group of Single Metals

Matrix:

QC Level:

I

Lab Id:

001

Sample Date/Time: 30-NOV-93 1640 Received Date:

01-DEC-93

Client Sample Id: GM-1 Parameters:

Units:

Results:

Rpt Lmts:

Q: Batch:

Analyst:

LEAD (239.2)

MG/L

ND

0.003

P2W367

GJ

(0) Page 2
Date 10-Dec-93

Accession:

312041

Client:

Project Number:

GERAGHTY & MILLER CI0299.002

Project Name:

NAVISTAR-BNR

Project Location: ROCK ISLAND
Test: Group of Single Metals
Matrix: LIQUID

QC Level:

I

Sample Date/Time: 30-NOV-93 1600 Received Date:

01-DEC-93

Lab Id: 002 Client Sample Id: GM-2

Units:

Results: Rpt Lmts: Q: Batch:

Analyst:

Parameters: LEAD (239.2)

MG/L

ND

0.003

P2W367

GJ

[0] Page 3 Date 10-Dec-93

Accession:

312041

Client:

GERAGHTY & MILLER

Project Number:

CI0299.002

Project Name: Project Location: ROCK ISLAND

NAVISTAR-BNR

Tesť:

Group of Single Metals LIQUID

Matrix:

QC Level:

I

003

Lab Id: Client Sample Id: GM-3 Sample Date/Time: 30-NOV-93 1500

Received Date:

01-DEC-93

Parameters:

Units:

Results:

Rpt Lmts: Q: Batch:

Analyst:

LEAD (239.2)

MG/L

ND

0.003

P2W367

[0] Page 4 Date 10-Dec-93

Accession:

312041

GERAGHTY & MILLER

Client: Project Number: CI0299.002
Project Name: NAVISTAR-BNF
Project Location: ROCK ISLAND

NAVISTAR-BNR

Tesť:

Group of Single Metals LIQUID

Matrix:

QC Level:

I

Lab Id: 004 Client Sample Id: GM-4

Sample Date/Time: 30-NOV-93 1420 Received Date: 01-DEC-93

Received Date:

Parameters:

Units:

Results:

Rpt Lmts:

Q: Batch:

Analyst:

LEAD (239.2)

MG/L

ND

0.003

P2W367

GJ

Analysis Report

Analysis: PCB

Accession: Client:

Project Number: CI0299.002
Project Name: NAVISTAR-BNR
Project Location: ROCK ISLAND
Department: PESTICIDES

312041 GERAGHTY & MILLER

[0] Page 1 Date 08-Dec-93 312041 Accession: Client: GERAGHTY & MILLER Project Number: CI0299.002 Project Name: NAVISTAR-BNR Project Location: ROCK ISLAND Test: PCB Analysis Method: 8080, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Extraction Method: 3510 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992. Matrix: LIQUID OC Level: Ι Lab Id: 001 Sample Date/Time: 30-NOV-93 1640 Received Date: Client Sample Id: GM-1 01-DEC-93 Batch: PCW302 Extraction Date: 02-DEC-93 Blank: A Dry Weight %: N/A Analysis Date: 07-DEC-93 Parameter: Units: Results: Rpt Lmts: Q: AROCLOR-1016 UG/L ND 1 AROCLOR-1221 UG/L ND UG/L AROCLOR-1232 ND UG/L UG/L AROCLOR-1242 ND 1 AROCLOR-1248 ī ND

UG/L

UG/L

%REC/SURR

%REC/SURR

INITIALS

ND

ND

36

41

SM

22-147

14-134

Comments:

AROCLOR-1254

AROCLOR-1260

DCB TCMX

ANALYST

[0] Page 2 Date 08-Dec-93 312041 Accession: GERAGHTY & MILLER Client: CI0299.002 Project Number: Project Name: Project Location: NAVISTAR-BNR ROCK ISLAND Test: PCB 8080, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. 3510 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992. LIQUID Analysis Method: Extraction Method: Matrix: QC Level: Ι 30-NOV-93 1600 Lab Id: 002 Sample Date/Time: Client Sample Id: GM-2Received Date: 01-DEC-93 Batch: PCW302 02-DEC-93 Extraction Date: Blank: A Dry Weight %: N/A Analysis Date: 07-DEC-93 Parameter: Units: Rpt Lmts: Results: Q: AROCLOR-1016 UG/L ND 1 AROCLOR-1221 UG/L ND 1 AROCLOR-1232 UG/L ND 1 AROCLOR-1242 UG/L ND 1 AROCLOR-1248 UG/L ND UG/L AROCLOR-1254 ND 1 AROCLOR-1260 UG/L ND %REC/SURR %REC/SURR 44 55

INITIALS

SM

22-147 14-134

Comments:

DCB

TCMX ANALYST

(0) Page 3 Date 08-Dec-93 312041 Accession: GERAGHTY & MILLER Client: Project Number: CI0299.002 Project Name: NAVISTAR-BNR Project Location: ROCK ISLAND Test: PCB Analysis Method: 8080, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Extraction Method: 3510 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992. Matrix: LIQUID QC Level: Lab Id: 003 Sample Date/Time: 30-NOV-93 1500 Client Sample Id: Received Date: 01-DEC-93 GM-3 Batch: PCW302 Extraction Date: 02-DEC-93 Blank: A Dry Weight %: N/A Analysis Date: 07-DEC-93 Parameter: Units: Results: Rpt Lmts: Q: AROCLOR-1016 UG/L ND AROCLOR-1221 UG/L ND 1 UG/L ND 1 AROCLOR-1232 AROCLOR-1242 AROCLOR-1248 ND 1 UG/L UG/L ND AROCLOR-1254 UG/L ND AROCLOR-1260 UG/L ND %RÉC/SURR 44 22-147 DCB TCMX %REC/SURR 49 14-134

INITIALS

SM

Comments:

ANALYST

(0) Page 4 Date 08-Dec-93

Accession:

312041

Client:

Lab Id:

GERAGHTY & MILLER

Project Number: Project Name:

CI0299.002

NAVISTAR-BNR ROCK ISLAND

Project Location: Test:

PCB

I

004

Analysis Method: 8080, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Extraction Method: 3510 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.

Matrix: LIQUID

OC Level:

Sample Date/Time: 30-NOV-93 1420 Received Date: 01-DEC-93

Batch: PCW302

Client Sample Id: GM-4

Extraction Date:

02-DEC-93

Blank: A Dry Weight %: N/A

Analysis Date: 07-DEC-93

Parameter: AROCLOR-1016 Units: UG/L UG/L

Results: Rpt Lmts: 1 1

Q:

AROCLOR-1221 AROCLOR-1232 AROCLOR-1242 AROCLOR-1248 AROCLOR-1254 AROCLOR-1260

UG/L UG/L UG/L UG/L

ND ND ND ND ND 72

ND

ND

65

SM

1

DCB TCMX ANALYST

%REC/SURR %REC/SURR INITIALS

22-147 14-134

Analysis Report

Analysis: POLYNUCLEAR AROMATICS BY 8310

Accession:

312041

Accession.
Client: GERAGHII & HILL
Project Number: CI0299.002
Project Name: NAVISTAR-BNR
Project Location: ROCK ISLAND
Papartment: SEMI-VOLATILE FUELS

[0) Page 1 Date 10-Dec-93

Accession:

312041

Client:

Project Number: Project Name:

GERAGHTY & MILLER CI0299.002

NAVISTAR-BNR

Project Location: Test:

ROCK ISLAND POLYNUCLEAR AROMATICS BY 8310

Analysis Method: 8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992 Extraction Method: 3510/SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Matrix:

LIQUID

QC Level:

Lab Id:

001

Sample Date/Time: 30-NOV-93 1640

Rpt Lmts:

Client Sample Id:

GM-1

Received Date: 01-DEC-93

Batch: PAW312

Blank: A

Dry Weight %: N/A

Extraction Date: Analysis Date:

ND

260

2900

820

ND

ND

ND

02-DEC-93 07-DEC-93

Q:

Parameter:
ACENAPHTHENE
ACENAPHTHYLENE
ANTHRACENE
BENZO (a) ANTHRACENE
BENZO (a) PYRENE
BENZO (b) FLUORANTHENE
BENZO (q, h, i) PERYLENE
BENZO (k) FLUORANTHENE

Units: UG/L UG/L UG/L

UG/L UG/L UG/L UG/L

UG/L

UG/L

UG/L

UG/L

UG/L

Results:

100

100

100

100

HENE CHRYSENE DIBENZO (a, h) ANTHRACENE FLUORANTHENE FLUORENE INDENO(1,2,3-cd)PYRENE NAPHTHALENE PHENANTHRENE PYRENE 1-METHYLNAPHTHALENE 2-METHYLNAPHTHALENE 2-CHLOROANTHRACENE

UG/L UG/L UG/L UG/L UG/L UG/L %REC/SURR

INITIALS

Comments:

ANALYST

[0) Page 2 Date 10-Dec-93

Accession:

312041

Client:

GERAGHTY & MILLER

Project Number: Project Name:

CI0299.002 NAVISTAR-BNR

Project Location: ROCK ISLAND Test:

POLYNUCLEAR AROMATICS BY 8310

Analysis Method:

8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992 Extraction Method: 3510/SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Matrix:

LIQUID

QC Level:

Lab Id:

002 GM-2

Sample Date/Time: 30-NOV-93 1600 Received Date: 01-DEC-93

Client Sample Id:

Q:

Batch: PAW312

Blank: A

Dry Weight %: N/A

Extraction Date: Analysis Date:

02-DEC-93 07-DEC-93

Parameter: ACENAPHTHENE ACENAPHTHYLENE ANTHRACENE

NAPHTHALENE

BENZO (a) ANTHRACENE BENZO (a) PYRENE BENZO (b) FLUORANTHENE

BENZO (g, h, i) PERYLENE BENZO (k) FLUORANTHENE CHRYSENE DIBENZO (a, h) ANTHRACENE FLUORANTHENE FLUORENE INDENO (1,2,3-cd) PYRENE

PHENANTHRENE PYRENE 1-METHYLNAPHTHALENE 2-METHYLNAPHTHALENE 2-CHLOROANTHRACENE

ANALYST

Units: Results: Rpt Lmts: UG/L ND 1 UG/L 130 1 UG/L 13 1 UG/L 15 1 UG/L 6 1 20 UG/L 1 UG/L 1

7

23

DGH

UG/L 18 220 UG/L UG/L 79 UG/L 1 UG/L ND UG/L 73 UG/L 120 UG/L 390 UG/L 160 %REC/SURR 573*

UG/L

UG/L

INITIALS

1

1

1

^{*}SURROGATE RECOVERY OUTSIDE ACCEPTANCE LIMITS DUE TO MATRIX INTERFERENCE.

[0) Page 3 Date 10-Dec-93

Accession:

312041

Client:

GERAGHTY & MILLER

Project Number:

CI0299.002 NAVISTAR-BNR

Project Name: NAVISTAR-BNF Project Location: ROCK ISLAND

Test:

POLYNUCLEAR AROMATICS BY 8310

Analysis Method:

8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992

Extraction Date:

Extraction Method: 3510/SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Matrix:

LIQUID

QC Level:

Lab Id: Client Sample Id:

003 GM-3 Sample Date/Time: 30-NOV-93 1500 Received Date: 01-DEC-93

Rpt Lmts:

N/A

02-DEC-93

Q:

Batch: PAW312 Blank: A

Dry Weight %:

89

ND

ND

07-DEC-93 Analysis Date:

Parameter:	Units:	Results:
ACENAPHTHENE	UG/L	ND
ACENAPHTHYLENE	UG/L	270
ANTHRACENE	UG/L	13
BENZO (a) ANTHRACENE	UG/L	13
BENZO (a) PYRENE	UG/L	3
BENZO (b) FLUORANTHENE	UG/L	15
BENZO (g, h, i) PERYLENE	UG/L	ND
BENZO (K) FLUORANTHENE	UG/L	5
CHRYSENE	UG/L	11
DIBENZO (a, h) ANTHRACENE	UG/L	ND
FLUORANTHENE	UG/L	170

INDENO(1,2,3-cd)PYRENE NAPHTHALENE **PHENANTHRENE PYRENE** 1-METHYLNAPHTHALENE 2-METHYLNAPHTHALENE 2-CHLOROANTHRACENE

UG/L 71 UG/L 80 ŪG/L 310 UG/L 230 %REC/SURR 483* INITIALS DGH

UG/L

UG/L

UG/L

1

Comments:

ANALYST

FLUORENE

^{*}SURROGATE RECOVERY OUTSIDE ACCEPTANCE LIMITS DUE TO MATRIX INTERFERENCE.

[0) Page 4 Date 10-Dec-93

Accession:

312041

Client:

GERAGHTY & MILLER

Project Number: Project Name:

CI0299.002 NAVISTAR-BNR

Test:

Project Location: ROCK ISLAND POLYNUCLEAR AROMATICS BY 8310

Analysis Method:

8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992 Extraction Method: 3510/SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Matrix:

LIQUID

QC Level:

Lab Id:

004

Sample Date/Time: Received Date:

24-154

30-NOV-93 1420 01-DEC-93

Q:

Client Sample Id:

GM-4

Extraction Date:

02-DEC-93 07-DEC-93

Batch: PAW312

Blank: A

N/A Dry Weight %:

Analysis Date:

250

DGH

1039*

Results: Rpt Lmts: Parameter: Units: UG/L ND ACENAPHTHENE 1 **ACENAPHTHYLENE** UG/L 310 1 UG/L 26 1 ANTHRACENE BENZO (a) ANTHRACENE UG/L 26 1 BENZO (a) PYRENE UG/L 12 1 37 BENZO (b) FLUORANTHENE UG/L 1 UG/L BENZO (g, h, i) PERYLENE 2 1 17 UG/L BENZO (k) FLUORANTHENE 1 UG/L 46 CHRYSENE UG/L ND DIBENZO (a, h) ANTHRACENE 1 FLUORANTHENE UG/L 390 10 FLUORENE UG/L 130 1 INDENO(1,2,3-cd)PYRENE NAPHTHALENE UG/L 2 1 UG/L ND 1 UG/L 130 10 PHENANTHRENE PYRENE UG/L 250 1 UG/L 550 1 1-METHYLNAPHTHALENE

UG/L

%REC/SURR

INITIALS

Comments:

ANALYST

2-METHYLNAPHTHALENE

2-CHLOROANTHRACENE

^{*}SURROGATE RECOVERY OUTSIDE ACCEPTANCE LIMITS DUE TO MATRIX INTERFERENCE.

[0) Page 5 Date 10-Dec-93

"Method Report Summary"

Accession Number: 312041

Client: GERAGHTY & MILLER

Project Number: CI0299.002
Project Name: NAVISTAR-BNR
Project Location: ROCK ISLAND

Test: POLYNUCLEAR AROMATICS BY 8310

	Client Sample Id:	Parameter:	Unit:	Result:
	- GM-1	ACENAPHTHYLENE	UG/L	1300
I	GM-1	ANTHRACENE		
		BENZO (a) ANTHRACENE	UG/L UG/L	580 460
		BENZO (b) FLUORANTHENE BENZO (k) FLUORANTHENE	UG/L	200
			UG/L	180
		CHRYSENE	UG/L	260
		FLUORANTHENE	UG/L	2900
		FLUORENE	UG/L	820
		PHENANTHRENE	UG/L	1600
		PYRENE	UG/L	2000
		1-METHYLNAPHTHALENE	UG/L	2400
		2-METHYLNAPHTHALENE	UG/L	1100
	GM-2	ACENAPHTHYLENE	UG/L	130
		ANTHRACENE	UG/L	13
		BENZO (a) ANTHRACENE	UG/L	15
		BENZO (a) PYRENE	UG/L	6
		BENZO (b) FLUORANTHENE	UG/L	20
		BENZO(g,h,i)PERYLENE	UG/L	1
		BENZO(k) FLUORANTHENE	UG/L	7
		CHRYSENE	UG/L	23
		DIBENZO (a, h) ANTHRACENE	UG/L	18
		FLUORANTHENE	UG/L	220
		FLUORENE	UG/L	79
		INDENO(1,2,3-cd)PYRENE	UG/L	1
		PHENANTHRENE	UG/L	73
		PYRENE	UG/L	120
		1-METHYLNAPHTHALENE	UG/L	390
		2-METHYLNAPHTHALENE	UG/L	160
	GM-3	ACENAPHTHYLENE	UG'/L	270
		ANTHRACENE	UG/L	13
		BENZO (a) ANTHRACENE	UG/L	13
		BENZO (a) PYRENE	UG/L	3
		BENZO (b) FLUORANTHENE	UG/L	15
		BENZO (k) FLUORANTHENE	UG/L	5
		CHRYSENE	UG/L	11
		FLUORANTHENE	UG/L	170
		FLUORENE	UG/L	89
		PHENANTHRENE	UG/L	71
		PYRENE	UG/L	80
		1-METHYLNAPHTHALENE	UG/L	310
		2-METHYLNAPHTHALENE	UG/L	230
	GM-4	ACENAPHTHYLENE	UG/L	310
		ANTHRACENE	UG/L	26
		BENZO (a) ANTHRACENE	UG/L	26

[0) Page 6 Date 10-Dec-93

"Method Report Summary"

Accession Number: 312041

Client: GERAGHTY & MILLER

Project Number: CI0299.002
Project Name: NAVISTAR-BNR
Project Location: ROCK ISLAND

Test: POLYNUCLEAR AROMATICS BY 8310

Client Sample Id:	Parameter:	Unit:	Result:
	BENZO (a) PYRENE	UG/L	12
	BENZO (b) FLUORANTHENE	UG/L	37
	BENZO(g,h,i)PERYLENE	UG/L	2
	BENZO (K) FLUORANTHENE	UG/L	17
	CHRYSENE	UG/L	46
	FLUORANTHENE	UG/L	390
	FLUORENE	UG/L	130
	INDENO(1,2,3-cd)PYRENE	UG/L	2
	PHENANTHRENE	UG/L	130
	PYRENE	UG/L	250
	1-METHYLNAPHTHALENE	UG/L	550
	2-METHYLNAPHTHALENE	UG/L	250

GERAUHTI & MILLER, INC. Environmental Services	Laboratory Task Order No	l I		I I CUSTODY REC (タウオノ	CORD Page_	of of the second
Project Number <u>\$10799.002</u>				TLE / CONTAINER D	ESCRIPTION	
Project Location NAVISTAR · BNR	Kick butho	/ /.	\$ / \tag{4}			/ / %
Laboratory ATI		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		/ / /	/ / /	/
Sampler(s)/Affiliation J. AUR G. J. IHRIG G.	In In In In In In In In In In In In In I					
SAMPLE IDENTITY Code Sampled	Lab ID	1 En /				TOTAL
GM-1 L 11/20 16:40		1	1			5
GM-2 L 1/30 16.00			<u> </u>			5
GM-3 L 11/30 1500 GM-4 L 11/30 1420						5
GII 4 C MAN MED			1			
						· ·
`						
,				 		
						
Sample Code: L = Liquid; S = So	lid; A = Air	<u> </u>		 	Total No. of Bottles/ Containers	20
Relinquished by:	Organization: Granization:	PAHIY - M	1417	Date 130125 Ti	me <u></u>	Seal Intact? Yes) No N/A
Relinquished by: Received by:	Organization:	il e	1 71 7 7 7 7		me	Seal Intact? Yes No N/A
Special Instructions/Remarks:	MPCETCK 11/10.	NITH INC	by 10 A F	HOF = ()		
Delivery Method: In Perso	on 💆 Common Carrier _	TITUX SDECIE		☐ Lab Courier	☐ Other	SPECIEY

.

Analysis Report

Analysis: Group of Single Metals

Accession:

Client:

Project Number: Project Name: Project Location:

Department:

312071

GERAGHTY & MILLER CI0299.002 NAVISTAR-BNR ROCK ISLAND METALS

[0) Page 1 Date 10-Dec-93

"Multiple Sample Report Format"

Accession:

312071

Client:

GERAGHTY & MILLER

Project Number: CI0299.002
Project Name: NAVISTAR-BNE
Project Location: ROCK ISLAND

CIO299.002 NAVISTAR-BNR

Test:

Group of Single Metals

QcLevel:

•	Lab Parameter: Id	Unit:	Result:	R.L	Q:
-	GM-5 001 LEAD (239.2)	MG/L	ND	0.003	
-	GM-6 002 LEAD (239.2)	MG/L	ND	0.003	
-	GM-0 003 LEAD (239.2)	MG/L	ND	0.003	
-	MW-5 004 LEAD (239.2)	MG/L	ND	0.003	
-	MW-6 005 LEAD (239.2)	MG/L	ND	0.003	
	MW-8 006 LEAD (239.2)	MG/L	ND	0.003	

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

[0] Page 2 Date 10-Dec-93

"Multiple Sample Report Format"

Accession:

312071

Client:

GERAGHTY & MILLER

Project Number: CI0299.002
Project Name: NAVISTAR-BNR
Project Location: ROCK ISLAND
Test: Group of Single Metals

Client Id:	Lab Matrix: Id:		te ceived:
GM-5 GM-6 GM-0 MW-5 MW-6 MW-8	001 LIQUID 002 LIQUID 003 LIQUID 004 LIQUID 005 LIQUID 006 LIQUID	01-DEC-93 0850 02 01-DEC-93 0910 02 01-DEC-93 1230 02 01-DEC-93 1130 02	-DEC-93 -DEC-93 -DEC-93 -DEC-93 -DEC-93

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Analysis Report

Analysis: PCB

Accession:
Client:
Project Number:
Project Name:
Project Location:
Department:

312071 GERAGHTY & MILLER CI0299.002 NAVISTAR-BNR ROCK ISLAND PESTICIDES

(0) Page 1 Date 08-Dec-93

Accession:

312071

Client:

Project Number:

GERAGHTY & MILLER CI0299.002

Project Name:

NAVISTAR-BNR

Project Location:

ROCK ISLAND

Test:

PCB

Analysis Method: 608, Federal Register 40 CFR, Part 136, July 1, 1992 Extraction Method: 608, Federal Register 40 CFR, Part 136, July 1, 1992

Matrix:

LIQUID Ι

QC Level: Lab Id:

001

Sample Date/Time: Received Date:

01-DEC-93 1000 02-DEC-93

Client Sample Id: GM-5

Extraction Date: 03-DEC-93

Batch: PCW302

Blank: B

N/A Dry Weight %:

Analysis Date:

08-DEC-93

Parameter:

UG/L

Units:

Results: ND 1 ND

Rpt Lmts: Q:

AROCLOR-1016 AROCLOR-1221 AROCLOR-1232 AROCLOR-1242 AROCLOR-1248

AROCLOR-1254

AROCLOR-1260

UG/L UG/L ND UG/L ND UG/L ND UG/L 1 UG/L ND 1

1 1 1

TCMX ANALYST

DCB

%REC/SURR %REC/SURR INITIALS

68 SM

39

22-147 14-134

[0) Page 2 Date 08-Dec-93

Accession:

312071

Client:

Project Number: Project Name:

GERAGHTY & MILLER CI0299.002 NAVISTAR-BNR

Project Location: Test:

ROCK ISLAND PCB

Analysis Method: 608, Federal Register 40 CFR, Part 136, July 1, 1992 Extraction Method: 608, Federal Register 40 CFR, Part 136, July 1, 1992

LIQUID Matrix:

QC Level:

Ι

Lab Id:

002

Client Sample Id: GM-6 Sample Date/Time: 01-DEC-93 0850

Received Date: 02-DEC-93

Batch: PCW302

Blank: B

Dry Weight %: N/A Extraction Date: Analysis Date:

03-DEC-93 07-DEC-93

Q:

Parameter: AROCLOR-1016 Units: UG/L

ND ND ND ND

Results:

Rpt Lmts:

AROCLOR-1221 AROCLOR-1232 AROCLOR-1242 AROCLOR-1248

AROCLOR-1254 AROCLOR-1260 DCB

UG/L UG/L UG/L UG/L UG/L

%REC/SURR

%REC/SURR

INITIALS

UG/L

ND ND ND 72

58

SM

1 1 22-147 14-134

1

1

ī

1

Comments:

TCMX

ANALYST

[0] Page 3 Date 08-Dec-93

Accession: 312071

Client: GERAGHTY & MILLER

Project Number: GERAGHT & M.
CI0299.002
Project Name: NAVISTAR-BNR
Project Location: ROCK ISLAND

Test: PCB

Analysis Method: 608, Federal Register 40 CFR, Part 136, July 1, 1992 Extraction Method: 608, Federal Register 40 CFR, Part 136, July 1, 1992 Matrix: LIQUID

QC Level:

Sample Date/Time: 01-DEC-93 0910 003 Lab Id: Client Sample Id: GM-0 Received Date: 02-DEC-93

Extraction Date: 03-DEC-93 07-DEC-93

Batch: PCW302 Blank: B Dry Weight %: N/A Analysis Date:

Parameter:	Units:	Results:	Rpt Lmts:	Q:
AROCLOR-1016	UG/L	ND	1	
AROCLOR-1221	UG/L	ND	1	
AROCLOR-1232	UG/L	ND	1	
AROCLOR-1242	UG/L	ND	1	
AROCLOR-1248	UG/L	ND	1	
AROCLOR-1254	UG/L	ND	1	
AROCLOR-1260	UG/L	ND	1	
DCB	%RÉC/SURR	7 7	22-147	
TCMX	%REC/SURR	58	14-134	
ANALYST	INITIALS	SM		

[0) Page 4 Date 08-Dec-93

22-147

14-134

Accession: 312071 GERAGHTY & MILLER Client: Project Number: CI0299.002 Project Name: Project Location: NAVISTAR-BNR ROCK ISLAND Test: PCB Analysis Method: 608, Federal Register 40 CFR, Part 136, July 1, 1992 Extraction Method: 608, Federal Register 40 CFR, Part 136, July 1, 1992 LIQUID Matrix: QC Level: I Lab Id: 004 Sample Date/Time: 01-DEC-93 1230 Client Sample Id: MW-5 Received Date: 02-DEC-93

Batch: PCW302 Extraction Date: 03-DEC-93 Blank: B Analysis Date: 07-DEC-93 Dry Weight %: N/A Parameter: Units: Results: Rpt Lmts: Q: AROCLOR-1016 UG/L ND UG/L UG/L AROCLOR-1221 ND ì AROCLOR-1232 ND AROCLOR-1242 UG/L ND UG/L UG/L AROCLOR-1248 ND 1 AROCLOR-1254 ī ND

UG/L ND %REC/SURR %REC/SURR DCB 67 TCMX 67 ANALYST INITIALS SM

Comments:

AROCLOR-1260

[0] Page 5 Date 08-Dec-93 Sample Date/Time: 01-DEC-93 1130 02-DEC-93

Accession: 312071 GERAGHTY & MILLER Client: Project Number: CI0299.002 NAVISTAR-BNR

Project Name: NAVISTAR-BNI Project Location: ROCK ISLAND Test: PCB

Analysis Method: 608, Federal Register 40 CFR, Part 136, July 1, 1992 Extraction Method: 608, Federal Register 40 CFR, Part 136, July 1, 1992

Matrix: QC Level:

Lab Id:

Blank: B

Batch: PCW302

I 005 Client Sample Id: MW-6

LIQÚID

Dry Weight %:

N/A

Extraction Date: Analysis Date:

Received Date:

03-DEC-93 07-DEC-93

Parameter: Results: Rpt Lmts: Units: Q: AROCLOR-1016 UG/L ND 1 UG/L AROCLOR-1221 1 ND AROCLOR-1232 UG/L ND 1 AROCLOR-1242 UG/L ND 1 UG/L AROCLOR-1248 ND 1 AROCLOR-1254 1 UG/L ND AROCLOR-1260 UG/L ND %REC/SURR 59 22-147 DCB %REC/SURR 54 TCMX 14-134 ANALYST INITIALS SM

(0) Page 6 Date 08-Dec-93

312071 Accession: GERAGHTY & MILLER Client: CI0299.002 Project Number:

Project Name: NAVISTAR-BN Project Location: ROCK ISLAND NAVISTAR-BNR

Test: PCB

Analysis Method: 608, Federal Register 40 CFR, Part 136, July 1, 1992 Extraction Method: 608, Federal Register 40 CFR, Part 136, July 1, 1992 Matrix: LIQUID

I QC Level:

Lab Id: 006 01-DEC-93 1040 Sample Date/Time: Client Sample Id: MW-8 Received Date: 02-DEC-93

Batch: PCW302 03-DEC-93 Extraction Date: Blank: B Analysis Date: 07-DEC-93 Dry Weight %: N/A

Parameter: Units: Results: Rpt Lmts: Q: AROCLOR-1016 UG/L ND AROCLOR-1221 ND UG/L 1 AROCLOR-1232 UG/L ND 1 AROCLOR-1242 UG/L ND 1 AROCLOR-1248 UG/L ND AROCLOR-1254 UG/L ND 1 AROCLOR-1260 UG/L ND %REC/SURR %REC/SURR 72 73 DCB 22-147 TCMX 14-134 ANALYST INITIALS SM

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

[0) Page 7
Date 08-Dec-93

"Method Report Summary"

Accession Number: 312071 Client: GERAGHTY & MILLER

Project Name: CI0299.002
Project Name: NAVISTAR-BNI
Project Location: ROCK ISLAND
Test: PCB CI0299.002 NAVISTAR-BNR

Unit: Client Sample Id: Parameter: Result:

GM-5 AROCLOR-1254 UG/L 1 ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Analysis Report

Analysis: POLYNUCLEAR AROMATICS BY 8310

Accession:

Accession:
Client: GERAGHTY & FILL
Project Number: C10299.002
Project Name: NAVISTAR-BNR
Project Location: ROCK ISLAND
SEMI-VOLATILE FUELS

312071

[0) Page 1 Date 15-Dec-93

Accession:

312071

Client:

GERAGHTY & MILLER

Project Number: Project Name:

CI0299.002

Project Location: ROCK ISLAND

NAVISTAR-BNR

Test:

POLYNUCLEAR AROMATICS BY 8310

Analysis Method: 8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992 Extraction Method: 3510/SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Matrix:

LIQUID Ι

QC Level:

001 Lab Id: Client Sample Id: GM-5 Sample Date/Time: 01-DEC-93 1000

Received Date: 02-DEC-93

Batch: PAW313

Blank: A

Dry Weight %: N/A

Extraction Date: Analysis Date:

03-DEC-93 13-DEC-93

	Parameter:	Units:	Results:	Rpt Lmts:	Q:
-	ACENAPHTHENE	UG/L	ND	100	
	ACENAPHTHYLENE	UG/L	730	100	
	ANTHRACENE	UG/L	160	100	
	BENZO (a) ANTHRACENE	UG/L	170	100	
	BENZO (a) PYRENE	UG/L	ND	100	
	BENZO (b) FLUORANTHENE	UG/L	300	100	
	BENZO (g, h, i) PERYLENE	UG/L	ND	100	
	BENZO(k) FLUORANTHENE	UG/L	ND	100	
•	CHRYSENE	UG/L	250	100	
	DIBENZO (a, h) ANTHRACENE	UG/L	ND	100	
	FLUORANTHENE	UG/L	2400	100	
	FLUORENE	UG/L	840	100	
_	INDENO(1,2,3-cd)PYRENE	UG/L	ND	100	
•	NAPHTHALENE	UG/L	ND	100	
	PHENANTHRENE	UG/L	840	100	
	PYRENE	UG/L	1800	100	
	1-METHYLNAPHTHALENE	UG/L	3400	100	
•	2-METHYLNAPHTHALENE		1400	100	
	2-CHLOROANTHRACENE	%REC/SURR	D*	24-154	

INITIALS

DGH

Comments:

ANALYST

[0) Page 2 Date 15-Dec-93

Accession:

312071

Accession:
Client: GERAGHTY & MILLER
Project Number: CI0299.002
Project Name: NAVISTAR-BNR
Project Location: ROCK ISLAND
POLYNUCLEAR AROMATICS BY 8310
POLYNUCLEAR AROMATICS BY 8310
Sept. SW 846, 3rd Edition, Sept. Analysis Method: 8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992

Extraction Method: 3510/SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Matrix:

LIQUID

QC Level:

Lab Id: 002 Sample Date/Time: 01-DEC-93 0850

Client Sample Id: GM-6

Received Date: 02-DEC-93

Extraction Date: 03-DEC-93

Batch: PAW313 Blank: A 13-DEC-93 Dry Weight %: N/A Analysis Date:

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE ACENAPHTHYLENE	UG/L UG/L	ND 480	100 100	
ANTHRACENE	UG/L	120	100	
BENZO (a) ANTHRACENE	UG/L	110	100	
BENZO(a) PYRENE BENZO(b) FLUORANTHENE	UG/L UG/L	ND	100 100	
BENZO (g, h, i) PERYLENE	UG/L	ND	100	
BENZO(k) FLUORANTHENE	UG/L		100	
CHRYSENE	UG/L		100	
DIBENZO(a,h)ANTHRACENE	UG/L		100	
FLUORANTHENE FLUORENE	UG/L UG/L		100 100	
INDENO(1,2,3-cd)PYRENE	UG/L	ND	100	
NAPHTHALENE	UG/L		100	
PHENANTHRENE	UG/L	570	100	
PYRENE	UG/L UG/L		100	
1-METHYLNAPHTHALENE 2-METHYLNAPHTHALENE	UG/L	850	100 100	
2-CHLOROANTHRACENE	%REC/SURR		24-154	
ANALYST	INITIALS	DGH		

[0) Page 3 Date 15-Dec-93

Accession:

312071

Client:

GERAGHTY & MILLER

Project Number: Project Name:

CI0299.002 NAVISTAR-BNR

Project Location: ROCK ISLAND

Test:

POLYNUCLEAR AROMATICS BY 8310

Analysis Method: 8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992 Extraction Method: 3510/SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Matrix:

LIQUID

QC Level:

Lab Id:

003

Sample Date/Time: 01-DEC-93 0910

Client Sample Id:

GM-0

Received Date: 02-DEC-93

Batch: PAW313

Blank: A

Dry Weight %: N/A Extraction Date: Analysis Date:

03-DEC-93 08-DEC-93

Q:

Parameter:	Units:	Results:	Rpt Lmts:
ACENAPHTHENE	UG/L	ND	1
ACENAPHTHYLENE	UG/L	310	1
ANTHRACENE	UG/L	16	1
BENZO (a) ANTHRACENE	UG/L	14	1
BENZO (a) PYRENE	UG/L	ND	1
BENZO (b) FLUORANTHENE	UG/L	ND	1
BENZO(g,h,i) PERYLENE	UG/L	ND	1
BENZO (k) FLUORANTHENE	UG/L	ND	1
CHRYSENE	UG/L	9	1
DIBENZO (a,h) ANTHRACENE	UG/L	ND	1
FLUORANTHENE	UG/L	ND	1
FLUORENE	UG/L	170	1
INDENO(1,2,3~cd)PYRENE	UG/L	ND	1
NAPHTHALENE	UG/L	ND	1
PHENANTHRENE	UG/L	77	1
PYRENE	UG/L	130	1
1-METHYLNAPHTHALENE	UG/L	540	1
2-METHYLNAPHTHALENE	UG/L	260	1
2-CHLOROANTHRACENE	%REC/SURR	477*	24-154

INITIALS

DGH

ANALYST

^{*}SURROGATE RECOVERY OUTSIDE ACCEPTANCE LIMITS DUE TO MATRIX INTERFERENCE.

[0) Page 4 Date 15-Dec-93

Accession:

312071

Client:

GERAGHTY & MILLER

Project Number: Project Name:

CI0299.002 NAVISTAR-BNR Project Location: ROCK ISLAND

Dry Weight %:

Test:

POLYNUCLEAR AROMATICS BY 8310

Analysis Method: 8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992 Extraction Method: 3510/SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Results:

120

8

10

6

ND

ND

3

ND

ND

56

120

Matrix:

LIQUID Ι

QC Level:

Sample Date/Time: 01-DEC-93 1230

1

1

1

Lab Id: 004 Client Sample Id: MW-5

Received Date: 02-DEC-93

Rpt Lmts:

Batch: PAW313

Blank: A

N/A

Extraction Date: Analysis Date:

03-DEC-93

Q:

Parameter:

Units:

08-DEC-93

-	
	ACENAPHTHE
	A CENTA DUTTED

ACENAPHTHENE
ACENAPHTHYLENE
ANTHRACENE
BENZO (a) ANTHRACENE
BENZO(a) PYRENE
BENZO (b) FLUORANTHENE
BENZO (g, h, i) PERYLENE
BENZO (k) FLUORANTHENE
CHRYSENE
DIBENZO (a, h) ANTHRACENE
FLUORANTHENE

FLUORENE INDENO(1,2,3-cd)PYRENE NAPHTHALENE

PHENANTHRENE PYRENE 1-METHYLNAPHTHALENE 2-METHYLNAPHTHALENE 2-CHLOROANTHRACENE ANALYST

UG/L UG/L UG/L UG/L UG/L UG/L UG/L UG/L UG/L UG/L

UG/L UG/L UG/L UG/L

UG/L

UG/L

UG/L

UG/L

%REC/SURR

INITIALS

ND ND 49 70 530 ND 287* DGH

> 1 24-154

^{*}SURROGATE RECOVERY OUTSIDE ACCEPTANCE LIMITS DUE TO MATRIX INTERFERENCE.

[0] Page 5 Date 15-Dec-93

Accession:

312071

Client:

GERAGHTY & MILLER

Project Number: GERAGHTY & M.
CI0299.002
Project Name: NAVISTAR-BNR

Project Location: ROCK ISLAND

LIQUID

Test: POLYNUCLEAR AROMATICS BY 8310
Analysis Method: 8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992
Extraction Method: 3510/SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Matrix: OC Level:

Lab Id:

005

Sample Date/Time: 01-DEC-93 1130 Received Date: 02-DEC-93

Client Sample Id: MW-6

Batch: PAW313

Extraction Date: Analysis Date:

03-DEC-93 13-DEC-93

Blank: A

Dry Weight %: N/A

	Parameter:	Units:	Results:	Rpt Lmts: Q:
~	ACENAPHTHENE	UG/L	ND	100
	ACENAPHTHYLENE	UG/L	1300	100
	ANTHRACENE	UG/L	500	100
	BENZO (a) ANTHRACENE	UG/L	680	100
4	BENZO (a) PYRENE	UG/L	630	100
	BENZO (b) FLUORANTHENE	UG/L	1100	100
	BENZO (g, h, i) PERYLENE	UG/L	290	100
	BENZO (K) FLUORANTHENE	UG'/L	500	100
-	CHRYSENE	UG/L	1300	100
	DIBENZO (a, h) ANTHRACENE	UG/L	1500	100
	FLUORANTHENE	UG/L	8100	100
	FLUORENE	UG/L	2000	100
	INDENO(1,2,3-cd)PYRENE	UG/L	180	100
-	NAPHTHALENE	UG/L	ND	100
	PHENANTHRENE	UG/L	2200	100
	PYRENE	UG/L	6000	100
	1-METHYLNAPHTHALENE	UG/L	6600	100
#	2-METHYLNAPHTHALENE		2500	100
	2-CHLOROANTHRACENE		D*	24-154
	ANALYST	INITIALS	DGH	

[0) Page 6 Date 15-Dec-93

Q:

Accession:

312071

Client:

Project Number:

GERAGHTY & MILLER CI0299.002

Project Name:

NAVISTAR-BNR

Dry Weight %:

Project Location: Test:

ROCK ISLAND POLYNUCLEAR AROMATICS BY 8310

Analysis Method: 8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992 Extraction Method: 3510/SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Results:

LIQUID

Matrix:

QC Level:

Ι

006

Sample Date/Time: 01-DEC-93 1040

Rpt Lmts:

Client Sample Id:

MW-8

Received Date: 02-DEC-93

Blank: A

Batch: PAW313

N/A

Units:

Extraction Date: 03-DEC-93 08-DEC-93 Analysis Date:

1

1

1

1 1

	Parameter:
-	
	ACENAPHTHENE
	ACENAPHTHYLENE
	ANTHRACENE
	BENZO (a) ANTHRACENE
~	BENZO(a) PYRENE
	BENZO (b) FLUORANTHENE
	BENZO (q, h, i) PERYLENE
	BENZO (K) FLUORANTHENE
	CHRYSENE
_	DIBENZO (a, h) ANTHRACENE
	FLUORANTHENE
	FLUORENE

UG/L	ND	
UG/L	ND	
TIC /T	NID	

DIBENZO (a, h) ANTHRACENE
FLUORANTHENE
FLUORENE
INDENO(1,2,3-cd)PYRENE
NAPHTHALENE
PHENANTHRENE
PYRENE
1-METHYLNAPHTHALENE
2-METHYLNAPHTHALENE
2-CHLOROANTHRACENE
ANALYST

UG/L	עא	1
UG/L	ND	1
UG/L	23	1
UG/L	6	1
%REC/SURR	75	24-154
INITIALS	DGH	

[0) Page 7 Date 15-Dec-93

"Method Report Summary"

Accession Number: 312071

Client:

GERAGHTY & MILLER CI0299.002 Project Number: CI0299.002
Project Name: NAVISTAR-BNR
Project Location: ROCK ISLAND
Test: POLYNUCLEAR AROMATICS BY 8310

	Client Sample Id:	Parameter:	Unit:	Result:
	GM-5	ACENAPHTHYLENE ANTHRACENE	UG/L	730
•		ANTHRACENE	UG/L	160
		ACENAPHTHYLENE ANTHRACENE BENZO (a) ANTHRACENE BENZO (b) FLUORANTHENE CHRYSENE	UG/L UG/L UG/L	170
		BENZO (b) FLUORANTHENE	UG/L	300
		CHRYSENE	UG/L	250
•		FLUORANTHENE	UG/L UG/L UG/L	2400
		FLUORENE	UG/L	840
		PHENANTHRENE	UG/I.	840
		PYRENE	UG/L UG/L	1800
		1-METHYLNAPHTHALENE	UG/L	3400
•		2-METHYLNAPHTHALENE	UG/L UG/L	1400
	GM-6	ACENAPHTHYLENE	UG/L	480
	GI-1 - 0	ANTHRACENE	IIG/I.	120
		ACENAPHTHYLENE ANTHRACENE BENZO(a) ANTHRACENE BENZO(b) FLUORANTHENE	UG/L UG/L	110
		BENZO (b) FLUORANTHENE	IIG/I.	210
		CHRYSENE	UG/L UG/L	250
		FLUODANTHENE	UG/L	1600
		FLUORENE	UG/L	540
_		BENZO (b) FLUORANTHENE CHRYSENE FLUORANTHENE FLUORENE PHENANTHRENE PYRENE	UG/L	570
,		PYRENE	IIG/I.	1100
		1-METHYLNAPHTHALENE	UG/L UG/L	2000
		2-METHYLNAPHTHALENE	IIG/I	850
	GM-0	2-METHYLNAPHTHALENE ACENAPHTHYLENE	UG/L	310
1			UG/L	16
			UG/L	14
		CUDVCENE	UG/L	9
		ELIODENE	IIC/I	170
		PUCKENE	UG/L UG/L	77
ľ		DVDENE	UG/L	130
		1-METHYLNAPHTHALENE	UG/L	540
		2-METHYLNAPHTHALENE	IIC/I.	260
	MW-5		UG/L	120
1	M-2	ACENAPHTHYLENE ANTHRACENE BENZO (a) ANTHRACENE BENZO (b) FLUORANTHENE FLUORANTHENE	IIG/I	8
		RENZO (a) ANTHRACENE	IIG/I.	10
		RENZO (a) DVDENE	IIG/I.	6
		DENZO (L) FLUODANTHENE	IIG/I	3
		ELUODANTHENE	UG/L	120
•		FLUODENE	UG/L	56
		DUENANTHDENE	UG/L	49
			UG/L	70
		PIREME	UG/L	530
_	Mar C		UG/L	1300
-			UG/L	500
			UG/L	680
		DEMAC (A) ANTIMACEME	о д / п	000

[0) Page 8 Date 15-Dec-93

"Method Report Summary"

Accession Number: 312071

Client: GERAGHTY & MILLER
Project Number: CI0299.002
Project Name: NAVISTAR-BNR
Project Location: ROCK ISLAND
Test: POLYNUCIES

POLYNUCLEAR AROMATICS BY 8310

Client Sample Id:	Parameter:	Unit:	Result:
	BENZO (a) PYRENE	UG/L	630
	BENZO (b) FLUORANTHENE	UG/L	1100
	BENZO(g,h,i)PERYLENE	UG/L	290
	BENZO (K) FLUORANTHENE	UG/L	500
	CHRYSENE	UG/L	1300
	DIBENZO (a, h) ANTHRACENE	UG/L	1500
	FLUORANTHENE	UG/L	8100
	FLUORENE	UG/L	2000
	INDENO $(1,2,3-cd)$ PYRENE	UG/L	180
	PHENANTHRENE	UG/L	2200
	PYRENE	UG/L	6000
	1-METHYLNAPHTHALENE	UG/L	6600
	2-METHYLNAPHTHALENE	UG/L	2500
MW-8	1-METHYLNAPHTHALENE	UG/L	23
	2-METHYLNAPHTHALENE	UG/L	6

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Analysis Report

Analysis: VOLATILES (8240)

Accession:

Accession.

Client: GERAGHTY & M.

Project Number: CI0299.002

Project Name: NAVISTAR-BNR

Project Location: ROCK ISLAND

ORGANIC/MS

312071

GERAGHTY & MILLER CI0299.002

(0) Page 1 Date 17-Dec-93 312071 Accession: GERAGHTY & MILLER Client: Project Number: CI0299.002 Project Name: NAVISTAR-BNR Project Location: ROCK ISLAND VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Test: Analysis Method: Extraction Method: N/A Matrix: LIQUID QC Level: Sample Date/Time: 01-DEC-93 1000 Lab Id: 001 Client Sample Id: GM-5 Received Date: 02-DEC-93 Batch: VIW158 Extraction Date: N/A 08-DEC-93 Blank: D Dry Weight %: N/A Analysis Date: Parameter: Units: Results: Rpt Lmts: Q: ACETONE UG/L ND 10 ACROLEIN UG/L ND 100 ACRYLONITRILE UG/L ND 100 UG/L BENZENE 3 1 BROMODICHLOROMETHANE UG/L ND 1 **BROMOFORM** UG/L ND 2 UG/L **BROMOMETHANE** ND 1 2-BUTANONE (MEK) UG/L ND 3 CARBON DISULFIDE CARBON TETRACHLORIDE UG/L UG/L ND 2 ND CHLOROBENZENE UG/L ND CHLOROETHANE UG/L ND 1 2-CHLOROETHYLVINYL ETHER UG/L ND 2 CHLOROFORM UG/L ND 2 CHLOROMETHANE UG/L ND CHLORODIBROMOMETHANE UG/L ND 5 5 UG/L ND DIBROMOMETHANE **DICHLORODIFLUOROMETHANE** UG/L ND 1,1-DICHLOROETHANE UG/L ND 1 1,2-DICHLOROETHANE UG/L ND 2 UG/L 1,1-DICHLOROETHENE 1 ND TOTAL 1,2-DICHLOROETHYLENE UG/L ND 1,2-DICHLOROPROPANE 2 UG/L ND ì CIS-1,3-DICHLOROPROPENE UG/L ND TRANS-1, 3-DICHLOROPROPENE UG/L ND 1 1,4-DICHLORO-2-BUTENE UG/L ND ND 1 ETHYL BENZENE UG/L ETHYL METHACRYLATE UG/L ND ND 3 2-HEXANONE UG/L IODOMETHANE UG/L ND METHYLENE CHLORIDE 3 UG/L ND 4-METHYL-2-PENTANONE UG/L ND 3 2 STYRENE UG/L ND

UG/L

UG/L

UG/L

UG/L

UG/L

UG/L

UG/L

ND

ND

ND

ND

ND

ND

ND

2

1

5

2

1

1,1,2,2-TETRACHLOROETHANE

TETRACHLOROETHENE

TRICHLOROETHENE

1,1,1-TRICHLOROETHANE

1,1,2-TRICHLOROETHANE

TRICHLOROFLUOROMETHANE

TOLUENE

[0] Page 2 Date 17-Dec-93

88-115

312071 Accession:

GERAGHTY & MILLER Client:

Project Number: Project Name: CI0299.002 NAVISTAR-BNR Project Location: ROCK ISLAND VOLATILES (

VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Analysis Method:

Extraction Method: N/A LÍQUID Matrix:

QC Level: I

Lab Id: 001 Client Sample Id: GM-5		-			1-DEC-93 1000 2-DEC-93		
Parameter:	Units:	Results:	Rpt Lm	nts:	Q:		
1,2,3 TRICHLOROPROPANE	UG/L	ND	5				
VÍNÝL ACETATE	UG/L	ND	2				
VINYL CHLORIDE	UG/L	ND	1				
TOTAL XYLENES	UG/L	ND	2				
BROMOFLUOROBENZENE	%RÉC/SURR	138*	86-115	5			
1,2-DICHLOROETHANE-D4	%REC/SURR	97	76-114	ļ			

%REC/SURR

INITIALS

97

LP

Comments:

TOLUENE-D8

ANALYST

^{*} SURROGATE RECOVERY OUTSIDE ACCEPTANCE LIMITS DUE TO MATRIX INTERFERENCE.

[0) Page 3 Date 17-Dec-93 Accession: 312071 GERAGHTY & MILLER Client: Project Number: CI0299.002 Project Name: NAVISTAR-BNR Project Location: ROCK ISLAND VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Test: Analysis Method: Extraction Method: N/A LIQUID Matrix: QC Level: Ι Lab Id: 002 Sample Date/Time: 01-DEC-93 0850 Client Sample Id: GM-6 Received Date: 02-DEC-93 Batch: VIW159 Extraction Date: N/A Blank: A Dry Weight %: N/A Analysis Date: 08-DEC-93 Parameter: Units: Results: Rpt Lmts: Q: ACETONE UG/L ND 10 ACROLEIN UG/L ND 100 UG/L ACRYLONITRILE ND 100 BENZENE UG/L ND BROMODICHLOROMETHANE UG/L ND 1 **BROMOFORM** UG/L ND **BROMOMETHANE** UG/L ND 1 2-BUTANONE (MEK) UG/L ND CARBON DISULFIDE UG/L ND 1 CARBON TETRACHLORIDE UG/L ND CHLOROBENZENE UG/L ND CHLOROETHANE UG/L ND 1 2-CHLOROETHYLVINYL ETHER UG/L ND CHLOROFORM UG/L ND 225 CHLOROMETHANE UG/L ND **CHLORODIBROMOMETHANE** UG/L ND UG/L **DIBROMOMETHANE** ND **DICHLORODIFLUOROMETHANE** 5 UG/L ND 1,1-DICHLOROETHANE UG/L ND 1 UG/L 1,2-DICHLOROETHANE ND 2 1,1-DICHLOROETHENE 1 UG/L ND TOTAL 1,2-DICHLOROETHYLENE UG/L ND 1,2-DICHLOROPROPANE 2 UG/L ND CIS-1,3-DICHLOROPROPENE UG/L ND 1 TRANS-1, 3-DICHLOROPROPENE UG/L ND 1 1,4-DICHLORO-2-BUTENE UG/L ND ETHYL BENZENE UG/L ND ETHYL METHACRYLATE UG/L ND 5 2-HEXANONE UG/L ND 3 **IODOMETHANE** UG/L ND METHYLENE CHLORIDE UG/L ND 4-METHYL-2-PENTANONE UG/L ND 2 STYRENE UG/L ND 2 1,1,2,2-TETRACHLOROETHANE UG/L ND **TETRACHLOROETHENE** UG/L ND UG/L ND TOLUENE 1,1,1-TRICHLOROETHANE UG/L ND 1,1,2-TRICHLOROETHANE UG/L ND 2 TRICHLOROETHENE UG/L ND 1

UG/L

ND

1

TRICHLOROFLUOROMETHANE

[0] Page 4 Date 17-Dec-93

Accession: 312071

Client: GERAGHTY & MILLER
Project Number: C10299.002
Project Name: NAVISTAR-BNR
Project Location: ROCK ISLAND
Test: VOLATILES (8240)
Analysis Method: 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A
Matrix: LTOUID

Matrix: LIQUID

QC Level:

20 20.01.						
Lab Id: 002 Client Sample Id: GM-6		Sample Da Received			EC-93 085 EC-93	50
Parameter:	Units:	Results:	Rpt Lm	nts:	Q:	
1,2,3 TRICHLOROPROPANE	UG/L	ND	5			
VINYL ACETATE	UG/L	ND	2			
VINYL CHLORIDE	UG/L	ND	1			
TOTAL XYLENES	UG/L	ND	2			
BROMOFLUOROBENZENE	%REC/SURR	112	86-115	i		
1,2-DICHLOROETHANE-D4	%REC/SURR	99	76-114			
TOLUENE-D8	%REC/SURR	92	88-115	i		
ANALYST	TNITTALS	T.D				

[0] Page 5 Date 17-Dec-93

Accession: 312071

GERAGHTY & MILLER Client:

Project Number: Project Name: CI0299.002 NAVISTAR-BNR Project Location: ROCK ISLAND Test:

VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Analysis Method:

Extraction Method: N/A LIQUID Matrix: Ι

QC Level:

Lab Id: 003 Sample Date/Time: 01-DEC-93 0910 Client Sample Id: Received Date: GM-0 02-DEC-93

Batch: VIW158 Extraction Date: N/A

08-DEC-93 Blank: D Dry Weight %: N/A Analysis Date:

Parameter:	Units:	Results:	Rpt Lmts: Q:
ACETONE	UG/L	ND	10
ACROLEIN	UG/L	ND	100
ACRYLONITRILE	UG/L	ND	100
BENZENE	UG/L	ND	1
BROMODICHLOROMETHANE	UG/L	ND	
BROMOFORM	UG/L	ND	1 2 1
BROMOMETHANE	UG/L	ND	$\overline{1}$
2-BUTANONE (MEK)	UG/L	ND	3
CARBON DISULFIDE	UG/L	ND	3 1 2 1
CARBON TETRACHLORIDE	UG/L	ND	$\bar{2}$
CHLOROBENZENE	UG/L	ND	ī
CHLOROETHANE	UG/L	ND	ī
2-CHLOROETHYLVINYL ETHER	UG/L	ND	5
CHLOROFORM	UG/L	ND	2
CHLOROMETHANE	UG/L	ND	$\bar{2}$
CHLORODIBROMOMETHANE	UG/L	ND	5
DIBROMOMETHANE	UG/L	ND	5
DICHLORODIFLUOROMETHANE	UG/L	ND	1 5 2 2 5 5
1,1-DICHLOROETHANE	UG/L	ND	ī
1,2-DICHLOROETHANE	UG/L	ND	1 2
1,1-DICHLOROETHENE	UG/L	ND	ī
TOTAL 1,2-DICHLOROETHYLENE	UG/L	ND	5
1,2-DICHLOROPROPANE	UG/L	ND	5 2 1
CIS-1,3-DICHLOROPROPENE	UG/L	ND	ī
TRANS-1, 3-DICHLOROPROPENE	UG/L	ND	ī
1,4-DICHLORO-2-BUTENE	UG/L	ND	
ETHYL BENZENE	UG/L	ND	ī
ETHYL METHACRYLATE	UG/L	ND	5
2-HEXANONE	UG/L	ND	5 1 5 3 5 3 2 2 2
IODOMETHANE	UG/L	ND	5
METHYLENE CHLORIDE	UG/L	ND	3
4-METHYL-2-PENTANONE	UG/L	ND	3
STYRENE	UG/L	ND	$\bar{2}$
1,1,2,2-TETRACHLOROETHANE	UG/L	ND	2
TETRACHLOROETHENE	UG/L	ND	ĩ
TOLUENE	UG/L	ND	5
1,1,1-TRICHLOROETHANE	UG/L	ND	5
1,1,2-TRICHLOROETHANE	UG/L	ND	5 2
TRICHLOROETHENE	UG/L	ND	ĩ
TRICHLOROFLUOROMETHANE	UG/L	ND	ĩ
	, -	-	-

[0] Page 6 Date 17-Dec-93

Accession: 312071

GERAGHTY & MILLER CI0299.002 Client:

Project Number: Project Name: NAVISTAR-BNR

Project Location: ROCK ISLAND
Test: VOLATILES (8240)
Analysis Method: 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992.

Extraction Method: N/A LIQUID Matrix:

OC Level:

OC DEAGL:	-						
Lab Id: Client Sample Id:	003 GM-0		Sample Date/Time: Received Date:		01-DEC-93 0910 02-DEC-93		
Parameter:		Units:	Results:	Rpt Lm	ts:	Q:	
1,2,3 TRICHLOROPRO	PANE	UG/L	ND	5			
VINYL ACETATE		UG/L	ND	2			
VINYL CHLORIDE		UG/L	ND	1			
TOTAL XYLENES		UG/L	ND	2			
BROMOFLUOROBENZENE		%RÉC/SURR	107	86-115			
1,2-DICHLOROETHANE	-D4	%REC/SURR	101	76-114			
TOLUENE-D8		%REC/SURR	102	88-115			
ANALYST		INITIALS	LP				

(0) Page 7 Date 17-Dec-93

Accession: 312071

GERAGHTY & MILLER Client:

Project Number: CI0299.002
Project Name: NAVISTAR-BNI
Project Location: ROCK ISLAND NAVISTAR-BNR Test:

VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Analysis Method:

Extraction Method: N/A LÍQUID Matrix: QC Level: Ι

Lab Id: 004 Sample Date/Time: 01-DEC-93 1230 Client Sample Id: MW-5 Received Date: 02-DEC-93

Batch: VIW158 Extraction Date: N/A

08-DEC-93 Blank: D Dry Weight %: N/A Analysis Date:

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACETONE	UG/L	ND	10	
ACROLEIN	UG/L	ND	100	
ACRYLONITRILE	UG/L	ND	100	
BENZENE	UG/L	ND	1 1	
BROMODICHLOROMETHANE	UG/L	ND	1	
BROMOFORM	UG/L	ND	2 1 3 1 2	
BROMOMETHANE	ŬĠ/L	ND	1	
2-BUTANONE (MEK)	UG/L	ND	3	
CARBON DISULFIDE	UG/L	ND	1	
CARBON TETRACHLORIDE	UG/L	ND	2	
CHLOROBENZENE	UG/L	ND	1	
CHLOROETHANE	UG/L	ND	1	
2-CHLOROETHYLVINYL ETHER	UG/L	ND	5	
CHLOROFORM	ŬĠ/L	ND	2	
CHLOROMETHANE	UG/L	ND	2	
CHLORODIBROMOMETHANE	UG'/L	ND	1 5 2 2 5 5 5 1 2 1 5 2	
DIBROMOMETHANE	UG/L	ND	5	
DICHLORODIFLUOROMETHANE	UG/L	ND	5	
1,1-DICHLOROETHANE	UG/L	ND	ī	
1,2-DICHLOROETHANE	UG/L	ND	2	
1,1-DICHLOROETHENE	UG/L	ND	ī	
TOTAL 1,2-DICHLOROETHYLENE	UG/L	ND	5	
1,2-DICHLOROPROPANE	UG/L	ND	2	
CIS-1 3-DICHLOPOPPOPENE	UG/L	ND	โ	
TRANS-1.3-DICHLOROPROPENE	ŬĠ/L	ND	1 1	
CIS-1,3-DICHLOROPROPENE TRANS-1,3-DICHLOROPROPENE 1,4-DICHLORO-2-BUTENE ETHYL BENZENE	UG/L	ND		
ETHYL BENZENE	ŬG/L	ND	ĭ	
ETHYL METHACRYLATE	UG/L	ND	ŝ	
2-HEXANONE	ŬĠ/L	ND	3	
IODOMETHANE	UG/L	ND	5	
METHYLENE CHLORIDE	UG/L	ND	ăั	
4-METHYL-2-PENTANONE	UG/L	ND	5 1 5 3 5 3 3 2 2 1 5 5	
STYRENE	UG/L	ND	2	
	UG/L	ND	ົ້ງ	
1,1,2,2-TETRACHLOROETHANE TETRACHLOROETHENE	UG/L	ND	1	
		ND	<u> </u>	
TOLUENE	UG/L	ND ND	ົນ ຮ	
1,1,1-TRICHLOROETHANE	UG/L		ວ າ	
1,1,2-TRICHLOROETHANE	UG/L	ND ND	2	
TRICHLOROETHENE	UG/L	ND	1	
TRICHLOROFLUOROMETHANE	UG/L	ND	1	

(0) Page 8 Date 17-Dec-93

Accession:

312071

GERAGHTY & MILLER Client:

Project Number: Project Name:

CI0299.002 NAVISTAR-BNR

Project Location: ROCK ISLAND

Test:

Analysis Method: Extraction Method: N/A

VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992.

Matrix:

LIQUID

QC Level:

Lab Id:

I 004

Client Sample Id: MW-5		Received
Parameter:	Units:	Results:
1,2,3 TRICHLOROPROPANE	UG/L	ND
VINYL ACETATE	UG/L	ND

Sample Date/Time: 01-DEC-93 1230 Received Date: 02-DEC-93 Rpt Lmts: Q:

1,2,3 TRICHLOROPROPANE	UG/L	ND	5
VINYL ACETATE	UG/L	ND	2
VINYL CHLORIDE	UG/L	ND	1
TOTAL XYLENES	UG/L	ND	2
BROMOFLUOROBENZENE	%RÉC/SURR	143*	86-115
1,2-DICHLOROETHANE-D4	%REC/SURR	98	76-114
TOLUENE-D8	%REC/SURR	93	88-115
ANALYST	INITIALS	LP	

^{*} SURROGATE RECOVERY OUTSIDE ACCEPTANCE LIMITS DUE TO MATRIX INTERFERENCE.

(0) Page 9 Date 17-Dec-93

Accession:

312071

Client: GERAGHTY & MILLER

Project Number: Project Name: Project Location: CI0299.002 NAVISTAR-BNR

Test:

ROCK ISLAND VOLATILES (8240)

Analysis Method:

Extraction Method: N/A

8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992.

Matrix:

LIQUID

QC Level:

Ι

Lab Id: Client Sample Id: 005

Sample Date/Time:

01-DEC-93 1130

MW-6

Received Date:

02-DEC-93

Batch: VIW158

Blank: D

TRICHLOROETHENE

TRICHLOROFLUOROMETHANE

Dry Weight %: N/A

Extraction Date: Analysis Date:

N/A 08-DEC-93

	-	_		
Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACETONE	UG/L	17	10	
ACROLEIN	UG/L	ND	100	
ACRYLONITRILE	UG/L	ND	100	
BENZENE	UG/L	ND	1	
BROMODICHLOROMETHANE	UG/L	ND	1	
BROMOFORM	UG/L	ND	2 1	
BROMOFORM BROMOMETHANE 2-BUTANONE (MEK) CARBON DISULFIDE CARBON TETRACHLORIDE CHLOROBENZENE CHLOROETHANE	UG/L	ND	ī	
2-BUTANONE (MEK)	UG/L	ND		
CARBON DISULFIDE	UG/L	ND	ĺ	
CARBON TETRACHLORIDE	UG/L	ND	3 1 2 1	
CHLOROBENZENE	UG/L	ND		
CHLOROETHANE	UG/L	ND	1	
2-CHLOROETHYLVINYL ETHER	UG/L	ND	5	
CHLOROFORM	UG/L	ND	2	
CHLOROMETHANE	UG/L	ND	2	
CHLORODIBROMOMETHANE	UG'/L	ND	5	
DIBROMOMETHANE	UG/L	ND	1 5 2 2 5 5 5	
DICHLORODIFLUOROMETHANE	UG/L	ND	5	
DIBROMOMETHANE DICHLORODIFLUOROMETHANE 1,1-DICHLOROETHANE 1,2-DICHLOROETHANE 1,1-DICHLOROETHENE TOTAL 1,2-DICHLOROETHYLENE 1,2-DICHLOROPROPANE CIS-1,3-DICHLOROPROPENE TRANS-1,3-DICHLOROPROPENE 1,4-DICHLORO-2-BUTENE ETHYL BENZENE ETHYL BENZENE ETHYL METHACRYLATE 2-HEXANONE IODOMETHANE METHYLENE CHLORIDE 4-METHYL-2-PENTANONE	UG/L	ND		
1,2-DICHLOROETHANE	UG/L	ND	2	
1,1-DICHLOROETHENE	UG/L	ND	1	
TOTAL 1,2-DICHLOROETHYLENE	UG/L	ND	1 5 2 1	
1,2-DICHLOROPROPANE	UG'/L	ND	2	
CIS-1,3-DICHLOROPROPENE	UG/L	ND		
TRANS-1,3-DICHLOROPROPENE	UG/L	ND	1	
1,4-DICHLORO-2-BUTENE	UG/L	ND	5 1	
ETHYL BENZENE	UG/L	ND	1	
ETHYL METHACRYLATE	UG/L	ND	5 3	
2-HEXANONE	UG/L	ND	3	
IODOMETHANE	UG/L	ND	5 3	
METHYLENE CHLORIDE	UG/L	ND	3	
4-METHYL-2-PENTANONE	UG/L	ND	3	
STYRENE	UG/L	ND	2	
1,1,2,2-TETRACHLOROETHANE	UG/L	ND	2	
TETRACHLOROETHENE	UG/L	ND	2 1	
TOLUENE	UG/L	ND	5	
1,1,1-TRICHLOROETHANE	UG/L	ND	5 2	
1,1,2-TRICHLOROETHANE	UG/L	ND	2	
TRICHLOPORTHENE	ΠG/T.	מא	1	

UG/L

UG/L

ND

ND

[0) Page 10
Date 17-Dec-93

312071 Accession:

Client: GERAGHTY & MILLER

Project Number: Project Name: Project Location: CI0299.002

Project Number: C10299.002
Project Name: NAVISTAR-BNR
Project Location: ROCK ISLAND
Test: VOLATILES (8240)
Analysis Method: 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A
Matrix: LIQUID
OC Lovel: Liquid

I QC Level:

005 Sample Date/Time: 01-DEC-93 1130 Lab Id: Client Sample Id: MW-6 02-DEC-93 Received Date:

Parameter:	Units:	Results:	Rpt Lmts:	Q:
1,2,3 TRICHLOROPROPANE	UG/L	ND	5	
VINYL ACETATE	UG/L	ND	2	
VINYL CHLORIDE	UG/L	ND	1	
TOTAL XYLENES	UG/L	ND	2	
BROMOFLUOROBENZENE	%REC/SURR	103	86-115	
1,2-DICHLOROETHANE-D4	%REC/SURR	96	76-114	
TOLUENE-D8	%REC/SURR	9 6	88-115	
ANALYST	INITIALS	LP		

[0] Page 11 Date 17-Dec-93 Sample Date/Time: 01-DEC-93 1040 Received Date: 02-DEC-93 Extraction Date: N/A Analysis Date: 08-DEC-93 Results: Rpt Lmts: Q: 10 ND 100 ND ND 100 ND 1 ND 1 2 ND ND 1 3 ND ND 1 ND 2 ND 1 ND 1 5 ND 2 2 ND ND 5 ND ND 5 ND 5 ND ND 2 ND 1 ND 2 ND ND 1 ND 1 ND 5 ND ND ND 3 5 ND ND ND 2 ND 2 1 ND ND

5

2

1

312071 Accession: GERAGHTY & MILLER Client: Project Number: CI0299.002 Project Name: NAVISTAR-BNR Project Location: ROCK ISLAND VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Test: Analysis Method: Extraction Method: N/A LIQUID Matrix: QC Level: Ι Lab Id: 006 MW-8 Client Sample Id: Batch: VIW158 Blank: D Dry Weight %: N/A Parameter: Units: **ACETONE** UG/L UG/L ACROLEIN ACRYLONITRILE UG/L UG/L BENZENE BROMODICHLOROMETHANE UG/L UG/L UG/L **BROMOFORM BROMOMETHANE** 2-BUTANONE (MEK) UG/L CARBON DISULFIDE CARBON TETRACHLORIDE UG/L UG/L CHLOROBENZENE UG/L UG/L **CHLOROETHANE** 2-CHLOROETHYLVINYL ETHER UG/L CHLOROFORM UG/L CHLOROMETHANE UG/L CHLORODIBROMOMETHANE UG/L DIBROMOMETHANE UG/L **DICHLORODIFLUOROMETHANE** UG/L 1,1-DICHLOROETHANE UG/L 1,2-DICHLOROETHANE UG/L 1,1-DICHLOROETHENE UG/L TOTAL 1,2-DICHLOROETHYLENE UG/L 1,2-DICHLOROPROPANE UG/L CIS-1,3-DICHLOROPROPENE UG/L TRANS-1, 3-DICHLOROPROPENE UG/L 1,4-DICHLORO-2-BUTENE UG/L ETHYL BENZENE UG/L

UG/L

UG/L

UG/L UG/L

UG/L

UG/L

UG/L

UG/L

UG/L

UG/L

UG/L

UG/L

UG/L

ND

ND

ND

ND

ND

ETHYL METHACRYLATE

METHYLENE CHLORIDE

TETRACHLOROETHENE

TRICHLOROETHENE

4-METHYL-2-PENTANONE

1,1,1-TRICHLOROETHANE

1,1,2-TRICHLOROETHANE

TRICHLOROFLUOROMETHANE

1,1,2,2-TETRACHLOROETHANE

2-HEXANONE

STYRENE

TOLUENE

IODOMETHANE

[0) Page 12
Date 17-Dec-93

Accession: 312071

Client: GERAGHTY & MILLER

Project Number: CI0299.002
Project Name: NAVISTAR-BNR
Project Location: ROCK ISLAND
Test: VOLATILES (8240

Test: VOLATILES (8240)
Analysis Method: 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992.

Extraction Method: N/A
Matrix: LIQUID
QC Level: I

Lab Id:	006	Sample Date/Time:	01-DEC-93 1040
Client Sample Id:	MW-8	Received Date:	02-DEC-93

Parameter:	Units:	Results:	Rpt Lmts: Q:	
1,2,3 TRICHLOROPROPANE	UG/L	ND	5	
VINYL ACETATE	UG/L	ND	2	
VINYL CHLORIDE	UG/L	ND	1	
TOTAL XYLENES	UG/L	ND	2	
BROMOFLUOROBENZENE	%REC/SURR	112	86-115	
1,2-DICHLOROETHANE-D4	%REC/SURR	100	76-114	
TOLUENE-D8	%REC/SURR	98	88-115	
ANALYST	INITÍALS	LP		

[0] Page 13 Date 17-Dec-93

Accession: 312071

Client: GERAGHTY & MILLER

Project Number: Project Name: CI0299.002 NAVISTAR-BNR ROCK ISLAND Project Location:

VOLATILES (8240) 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Test: Analysis Method:

Extraction Method: N/A Matrix: WATER

QC Level:

Ι 007

Lab Id: Sample Date/Time: N/S Client Sample Id: TRIP BLANK Received Date: 02-DEC-93

Batch: VIW161 Extraction Date: N/A

Blank: B Dry Weight %: 14-DEC-93 N/A Analysis Date:

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACETONE	UG/L	ND	10	
ACROLEIN	UG'/L	ND	100	
ACRYLONITRILE	UG/L	ND	100	
BENZENE	UG/L	ND	1	
BROMODICHLOROMETHANE	UG/L	ND	ī	
BROMOFORM	UG/L	ND	1 2	
BROMOMETHANE	UG/L	ND		
2-BUTANONE (MEK)	UG/L	ND	1 3 1 2	
CARBON DISULFIDE	UG/L	ND	ì	
CARBON TETRACHLORIDE	UG/L	ND	2	
CHLOROBENZENE	UG/L	ND	ī	
CHLOROETHANE	UG/L	ND	ī	
2-CHLOROETHYLVINYL ETHER	UG/L	ND	5	
CHLOROFORM	UG/L	ND	2	
CHLOROMETHANE	UG/L	ND	2	
CHLORODIBROMOMETHANE	UG/L	ND	5	
DIBROMOMETHANE	UG/L	ND	5	
DICHLORODIFLUOROMETHANE	UG/L	ND	1 5 2 2 5 5 5	
1,1-DICHLOROETHANE	UG/L	ND	ĭ	
1,2-DICHLOROETHANE	UG/L	ND		
1,1-DICHLOROETHENE	UG/L	ND	2 1	
TOTAL 1,2-DICHLOROETHYLENE	UG/L	ND	Š	
1,2-DICHLOROPROPANE	UG/L	ND	5 2	
CIS-1,3-DICHLOROPROPENE	UG/L	ND	ī	
TRANS-1,3-DICHLOROPROPENE	UG/L	ND	1	
1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
ETHYL BENZENE	UG/L	ND	ĭ	
ETHYL METHACRYLATE	UG/L	ND	5	
2-HEXANONE	UG/L	ND	3	
IODOMETHANE	UG/L	ND	5 3 5 3 3 2 2	
METHYLENE CHLORIDE	UG/L	ND	3	
4-METHYL-2-PENTANONE	UG/L	ND	3	
STYRENE	UG/L	ND	2	
1,1,2,2-TETRACHLOROETHANE	UG/L	ND	2	
TETRACHLOROETHENE	UG/L	ND		
TOLUENE	UG/L	ND	5	
1,1,1-TRICHLOROETHANE	UG/L	ND	1 5 5 2	
1,1,2-TRICHLOROETHANE	UG/L	ND	2	
TRICHLOROETHENE	UG/L	ND	ī	
TRICHLOROFLUOROMETHANE	UG/L	ND	ī	

[0] Page 14 Date 17-Dec-93

312071 Accession:

Client: GERAGHTY & MILLER

Project Number: CI0299.002
Project Name: NAVISTAR-BNI
Project Location: ROCK ISLAND NAVISTAR-BNR VOLATILES (8240) Test:

Analysis Method: 8240, SW 846, 3rd Edition, September 1986 and Rev. 1, July 1992. Extraction Method: N/A Matrix: WATER

QC Level: Ι

Lab Id: 007 Client Sample Id: TRIP BLANK		Sample Da Received		
Parameter:	Units:	Results:	Rpt Lmts: Q:	
1,2,3 TRICHLOROPROPANE	UG/L	ND	5	
VÍNÝL ACETATE	UG/L	ND	2	
VINYL CHLORIDE	UG/L	ND	1	
TOTAL XYLENES	UG/L	ND	2	
BROMOFLUOROBENZENE	%REC/SURR	94	86-115	
1,2-DICHLOROETHANE-D4	%REC/SURR	95	76-114	
TOLUENE-D8	%REC/SURR	101	88-115	
ANALYST	INTTTALS	T.P		

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

[0) Page 15
Date 17-Dec-93

"Method Report Summary"

Accession Number: 312071

Client:

GERAGHTY & MILLER C10299.002

Project Number:

Project Name: NAVISTAR-BNR
Project Location: ROCK ISLAND
Test: VOLATILES (8240)

Client Sample Id:

Parameter:

Unit:

Result:

GM-5 MW-6

BENZENE **ACETONE** UG/L UG/L

17

GERAN & MILL Environment	JHT ER, II tal Serv	NC. vices	Laborato	ory Task O	order No		CHA	IN-OF-	CUSTO	Y REC	ORD	Page	of
Project Number	CIC	299.00:	2				SAM	MPLE BO	ITLE / CON	TAINER DE	SCRIPTION		
Project Location	AVIST/			MD	25.25	/4	150					/, ,	/ • /
Laboratory AT	<u> </u>			/	(3,0)	301	8 20 X	人人曾	/ /.	312)(I)	' / /	
Sampler(s)/Affiliation	1 <u>J.</u>	Date/Time	<u>M</u>	Sur de la companya de		25 15 ST ST ST ST ST ST ST ST ST ST ST ST ST	(080) 20 20 20 20 20 20 20 20 20 20 20 20 20					'/	
SAMPLE IDENTITY	Code	Sampled	Lab ID		7	<u> </u>	/ +						TOTAL
GM-5	<u> -</u>	12/01/10:00		2	1	1	<u> </u>				<u> </u>		5
GM-6	<u> </u>	1201 0850		2	1 1	 \	1 1			}	 		5
GM-0 MW-5	L	12/01 09/10		2	1 1		1 1				-		5
MW-6		201 11.30		2	 	 	1						5
MW-8	L	1201 1040		2	 	1							5
TRIP BLANK	L	1010		2		<u> </u>							5
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	 			-	-	[_				
Sample Code: L	= Liqu	uid; S = So		Air		I				<u> </u>		of Bottles/ Containers	23 132
Relinquished by:	M	NO H	tull	Organi Organi	ization: ((1)) ization:	AGHTY,	Mul		Date 1/2 1/2 Date 1	•	ne_ <u>Z:(X)</u> ne	PM	Seal Intact? Yes \No N/A
Relinquished by Received by). nda	S. Ka	£	Organi Organi	ization:	/Pens	ecolo		Date /2 /	Tir D <i>2 1</i> 93 Tir	ne <u>0959</u>	·(Seal Intact? Yes No N/A
Special Instructions \(\lambda \cdot \cd	Rema	rks:_ YSIRVI	1467716	15/10	(U)	A PH	-2.()						
Delivery Method	i:	☐ In Perso	on 🗡	Commo	on Carrier _		SPECIFY		□ Lab Co	ourier	☐ Other		r ne cur